JACOBSEN®
A Textron Company

4136607-PT

Parts & Maintenance Manual
Manual de Peças & Manutençao

HR-9016 Turbo™ Rotary Mower

70528 - Kubota V3300-DI-E2B, 4WD
70529 - Kubota V3300-DI-E2B, 4WD with ROPS
70530 - Kubota V3300-DI-E2B, 4WD EC

AVISO: Esta máquina pode causar ferimentos graves se for utilizada incorrectamente. A pessoa responsável pela sua utilização e manutenção deve ser previamente instruída para a sua utilização correcta, avisada sobre os perigos que ela pode causar e deve ler todo o manual antes de tentar preparar, conduzir, afinar ou reparar a máquina.

WARNING: If incorrectly used this machine can cause severe injury. Those who use and maintain this machine should be trained in its proper use, warned of its dangers and should read the entire manual before attempting to set up, operate, adjust or service the machine.

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GB English
PT Portuguese

To Order Parts

1. Write your **full** name and **complete** address on the order.
2. Explain where and how to make shipment.
3. Give product number, name and serial number that is stamped on the name plate or serial plate of your product.
4. Order by the quantity desired, the part number, paint code, and description of the part as given in the parts list.
5. Send or bring the order to an authorized Jacobsen Dealer.
6. Inspect all shipments on receipt. If any parts are damaged or missing, file a claim with the carrier before accepting.
7. Do not return material without a letter of explanation, listing the parts being returned. Transportation charges must be prepaid.

Use of other than authorized parts will void the warranty.

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This manual is designed for the Maintenance and Adjustment of this equipment.
Use the maintenance and adjustment instructions included in this manual and the operating instructions included in the **Safety and Operation Manual** to service the machine.

The **Safety and Operation Manual** must be kept in the pouch on the back of the seat at all times for reference by the operator.

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Litho In U.S.A. 12-2004

Suggested Stocking Guide

To Keep your Equipment fully operational and productive, maintain a stock of the more commonly used maintenance items. We have included part numbers for additional support materials and training aids. A more complete listing of accessories and attachments can be found in the Specifications Section

Service Parts

Qty.	Part No.	Description	Qty.	Part No.	Description
	4137894	Engine Oil Filter			
	5003370	Engine Air Filter			
	557619	Engine Fuel Filter			
	5003691	Hydraulic Charge Filter			
	5002693	Hydraulic Return Filter			

Service Support Material

Qty.	Part No.	Description
	4136606	Safety and Operation Manual
	4136607	Parts and Maintenance Manual
	4136876	Engine Parts Catalog

Qty.	Description
	Service Manual

How To Use This Manual

Abbreviations

N/S - Not serviced seperately, can only be obtained by ordering main component or kit.
AR -Variable quantity or measurement is required to obtain correct adjustment.
Symbols such as ▲, next to the item number, indicate that a note exists which contain additional information important in ordering that part.

Indented Items

Bulleted items indicate component parts that are included as part of an assembly or another component. These parts can be ordered separetely or as part of the main component.

Item	Part No.	Qty	Description	Serial Numbers/Notes
▲ 1	123456	1	Mount, Valve	*Indicates a piece part with note*
2	789012	1	Valve, Lift	*Includes Items 3 and 4*
3	345678	1	• Handle	*Serviced part included with Item 2*
4	N/S	1	• Seal Kit	*Non serviced part included with Item 2*
5	901234	1	Screw, 1/4-20 x 2” Hex Head	*Indicates Piece Part*

1 SAFETY

1.1 OPERATING SAFETY

WARNING

EQUIPMENT OPERATED IMPROPERLY OR BY UNTRAINED PERSONNEL CAN BE DANGEROUS.
Familiarize yourself with the location and proper use of all controls. Inexperienced operator's should receive instruction from someone familiar with the equipment before being allowed to operate the machine.

1. Safety is dependent upon the awareness, concern and prudence of those who operate or service the equipment. Never allow minors to operate any equipment.
2. It is your responsibility to read this manual and all publications associated with this equipment (Safety and Operation manual, engine manual, accessories and attachments). If the operator can not read English it is the owner's responsibility to explain the material contained in this manual to them.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Never allow anyone to operate or service the machine or its attachments without proper training and instructions; or while under the influence of alcohol or drugs.
5. Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears hands and feet. Operate the machine only in daylight or in good artificial light.
6. Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by Jacobsen.
7. Stay alert for holes in the terrain and other hidden hazards.
8. Inspect the area where the equipment will be used. Pick up all the debris you can find before operating. Beware of overhead obstructions (low tree limbs, electrical wires, etc.) and also underground obstacles (sprinklers, pipes, tree roots, etc.) Enter a new area cautiously. Stay alert for hidden hazards.
9. Never direct discharge of material toward bystanders, nor allow anyone near the machine while in operation. The owner/operator can prevent and is responsible for injuries inflicted to themselves, to bystanders and damage to property.
10. Do not carry passengers. Keep bystanders and pets a safe distance away.
11. Never operate equipment that is not in perfect working order or is without decals, guards, shields, discharge deflectors or other protective devices securely fastened in place.
12. Never disconnect or bypass any switch.
13. Do not change the engine governor setting or overspeed the engine
14. Carbon monoxide in the exhaust fumes can be fatal when inhaled. Never operate the engine without proper ventilation or in an enclosed area.
15. Fuel is highly flammable, handle with care.
16. Keep the engine clean. Allow the engine to cool before storing and always remove the ignition key.
17. Disengage all drives and engage parking brake before starting the engine (motor). Start the engine only when sitting in operator's seat, never while standing beside the unit.
18. Equipment must comply with the latest federal, state, and local requirements when driven or transported on public roads. Watch out for traffic when crossing or operating on or near roads.
19. Local regulations may restrict the age of the operator.
20. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
21. Operate the machine up and down the face of the slopes (vertically), not across the face (horizontally).
22. To prevent tipping or loss of control, do not start or stop suddenly on slopes. Reduce speed when making sharp turns. Use caution when changing directions.
23. Always use the seat belt when operating tractors equipped with a ROPS.

    Never use a seat belt when operating tractors without a ROPS.
24. Keep legs, arms and body inside the seating compartment while the vehicle is in motion.

This machine is to be operated and maintained as specified in this manual and is intended for the professional maintenance of specialized turf grasses. It is not intended for use on rough terrain or long grasses.

1.2 IMPORTANT SAFETY NOTES

This safety alert symbol is used to alert you to potential hazards.

DANGER - Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING - Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION - Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury and property damage. It may also be used to alert against unsafe practices.

*For pictoral clarity, some illustrations in this manual may show shields, guards or plates open or removed. Under no circumstances should this equipment be operated without these devices securely fastened in plac*e

WARNING

The operator back-up system on this tractor prevents the tractor from starting unless the brake pedal is engaged, mower switch is off and traction pedal is in neutral. The system will stop the engine if the operator leaves the seat without engaging the parking brake or setting the mower switch off.

NEVER operate tractor unless the operator back-up system is working.

WARNING

1. Before leaving the operator's position for any reason:
   a. Return traction pedal to neutral.
   b. Disengage all drives.
   c. Lower all implements to the ground.
   d. Engage parking brake.
   e. Stop engine and remove the ignition key.
2. Keep hands, feet, and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
3. Keep the area of operation clear of all bystanders and pets.
4. Never carry passengers, unless a seat is provided for them.
5. Never operate mowing equipment without the discharge deflector securely fastened in place.

By following all instructions in this manual, you will prolong the life of your machine and maintain its maximum efficiency. Adjustments and maintenance should always be performed by a qualified technician.

If additional information or service is needed, contact your Authorized Jacobsen Dealer who is kept informed of the latest methods to service this equipment and can provide prompt and efficient service. **Use of other than original or authorized Jacobsen parts and Accessories will void the warranty.**

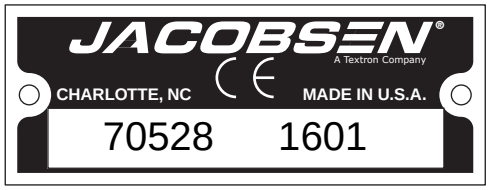
2 SPECIFICATIONS

2.1 PRODUCT IDENTIFICATION

70528 ..... HR 9016 Turbo, 4 Wheel Drive
70529 ..... HR 9016 Turbo, 4 Wheel Drive with ROPS
70530 ..... HR 9016 Turbo, 4 Wheel Drive EC

Serial Number ..... An identification plate, like the one shown, listing the serial number, is attached to the frame of the tractor and is located to the operator's right just over the rear axle.

Always provide the serial number of the unit when ordering replacement parts or requesting service information.



Product*	EEC Sound Power	Sound Pressure Level Operator Ear	Vibration M/S^2	
			Arms	Body
70530	105 dba	90 dba	.755	.026

* With engine at 2400 RPM (No Load)

2.2 ENGINE

Make ..... Kubota
Model V3300 DI-T-E2B
Horsepower ..... 90 hp (67 kW) @ 2600 rpm
Note: *Actual sustained horsepower will likely be lower than listed in specifications due to operating limitations and enviromental factors.*

Displacement ..... 202 cu. In. (3.32 liter)
Torque ..... 210 ft. lbs. (285 Nm) @ 1600 rpm
Fuel:
- Type ..... No. 2 Diesel (CUNA NC 630.01)
- Rating ..... Min. cetane rating 45
- Capacity ..... 35 U.S. Gal. (151 liters)

Governor Setting:
- Throttle Stop On ..... 2450 rpm (PTO off)
  2300 rpm (PTO engaged)
- Throttle Stop Off ..... 2750 rpm (Non EU only)
- Low Idle ..... 950 rpm

Lubrication:
- Capacity ..... 14 qts.
- Type ..... SAE 15 W40
- API Classification ..... CF 4, CD-II, CE

Air Filter ..... Dry type with evacuator valve and service indicator.

2.3 TRACTOR

Tires:
- Front ..... 29 x 14 - 15: 12 ply
- Rear ..... 24 x 12 -12: 6 ply
- Pressure ..... 20-22 psi (138-152 kPa)

Battery:
- Type ..... One Maintenance Free 12 Volt Battery
  600 CCA @ 0°F (-18°C)
- Group 75DT

Brakes:
- Service ..... Dynamic braking through traction circuit.
- Parking ..... Mechanical front wheel drum
  Hand lever actuated
- Turn-assist ..... Mechanical front wheel drum
  Two pedal actuation

Speed:
- Mow ..... 0 - 8.5 mph (13.6 kph)
- Transport - 2 WD ..... 0-20 mph (29 kph)
- Reverse - 2WD ..... 0-5.5 mph (8.9 kph)
- Reverse - 4 WD ..... 0 - 3 mph (4.8 kph)

Production ..... 16.5 acres per hour @ 8.5 mph

Hydraulic System:
Capacity ..... 55 U.S. gal. (208 liters) System
Reservoir ..... 33 U.S. gal. (125 liters)
Fluid Type ..... ISO VG 68
Cooling ..... Hydraulic oil Cooler
Charge Filter ..... 10 micron
Return Line Filter ..... 10 micron
Steering ..... Hydrostatic power steering

2.4 WEIGHTS AND DIMENSIONS

Dimensions:	Inches	(mm)
Length - Front deck down	174	(4420)
Height - Top of Steering Wheel	60	(1524)
Height - Top of ROPS	94	(2388)
Width - Mow	198	(5029)
Width - Transport	95	(2413)

Weights:	Lbs.	(kg)
Overall (less operator)	6385	(2880)

2.5 CUTTING UNITS

Width
- Front Deck ..... 92 in. (2336 mm)
- Side Decks ..... 59 in. (1499 mm)

Number of Blades
- Front Deck 5
- Side Decks 3

Overall Cutting Width ..... 16 ft. (2.4 m)
Cutting Height ..... 1-5.5 in. (25 - 140 mm)
Blade size ..... 21 in. (533 mm)
Tip speed ..... 16,500 ft./min. (5029 m/min.)
Tires
- Size ..... Ten 11 x 4.00 - 5.0 (4 ply)
  Two 13 x 6.50 - 6.0 (4 ply)
- Pressure ..... 20-25 psi (138-173 kPa)

2.6 ACCESSORIES & SUPPORT LITERATURE

Contact your area Jacobsen Dealer for a complete listing of accessories and attachments.

⚠ CAUTION

Use of other than Jacobsen authorized parts and accessories may cause personal injury or damage to the equipment and will void the warranty.

Air Blow Gun JAC5098
Orange Touch-up Paint (12 oz. spray) 554598
2-Post ROPS with Seat Belt 78138
● All Weather Cab w ROPS and Seat Belt ..... See Below
● Air Conditioner Kit ..... See Below
Leaf Mulching Kit 71055
High Lift Blade Kit 4116825
Light Harness Kit 5003564
Road Light Kit (Requires 5003564) 78154
Work Light Kit (Requires 5003564) 78155
Canopy / Sunshade 67857
Rear Steering Wheel Weight Kit 2812307
Carefree Tire Kit 2811453
Hood Locking Latch 1004049
Cold Start / Preheat Timer Kit 4137294
Cruise Control 67888
◆ Snowthrower ..... See Below
▲ Rotary Broom ..... See Below

Service and Support Literature

Safety and Operation Manual 3010791
Parts and Maintenance Manual 2810223
Operator Training Video 5003465
Service & Repair Manual

● Contact: Jodale Perry Corporation
Box 990, 300 Route 100
Morden, Manitoba, Canada R6M 1A8
Phone: (204) 822-9100
Fax: (204) 822-9111

◆ Contact: Loftness Specialized Equipment, Inc.
South Highway 4
Hector, MN 55342
Phone 800-828-7624
Fax (320) 848-6269
ATTN Doug Haley

▲ Contact: M-B Companies, Inc.
1200 S. Park Street, Box 148
Chilton, WI 53014
Phone: (888) 558-5801
Fax: (920) 898-4588

3.1 GENERAL

⚠ WARNING

To prevent injury, lower implements to the ground, disengage all drives, engage parking brake, stop engine and remove key from ignition switch before making any adjustments or performing maintenance.

Make sure the tractor is parked on a solid and level surface. Never work on a tractor that is supported only by the jack. Always use jack stands.

If only the front or rear of the tractor is raised, place chocks in front of and behind the wheels that are not raised.

1. Adjustments and maintenance should always be performed by a qualified technician. If proper adjustment cannot be made, contact an authorized Jacobsen Dealer.
2. Replace, do not adjust, worn or damaged components.
3. Do not wear jewelry or loose fitting clothing when making adjustments or repairs.

⚠ CAUTION

Be careful to prevent entrapment of the hands and fingers between moving and fixed components of the machine.

4. Do not change governor settings or overspeed the engine.

3.2 LEVELING DECKS

If the decks or casters have been removed for service or cutting height appears uneven, it may be necessary to level decks. **Adjust casters so cutting heights of outer blades are within 1/8” (3 mm) of each other**.

1. Position tractor and decks on a hard, flat, level surface. Position blades parallel to tractor as shown.
2. Check that air pressure in all caster tires is adjusted **equally.**
3. Set desired cutting height of deck using the 1/2” (13 mm) spacers **(E)** provided. See Section 3.5
4. Measure the height from the ground surface to the front edge **(B)** of the two outer blades for the wing decks and the center section of the front deck. Position the 1/8” (3 mm) leveling washers **(C)** above or below caster pivot as needed to obtain an even cutting height across decks. Keep the 1/16” (1.5 mm) thrust washers **(D)** positioned as shown, one above and one below caster pivot.

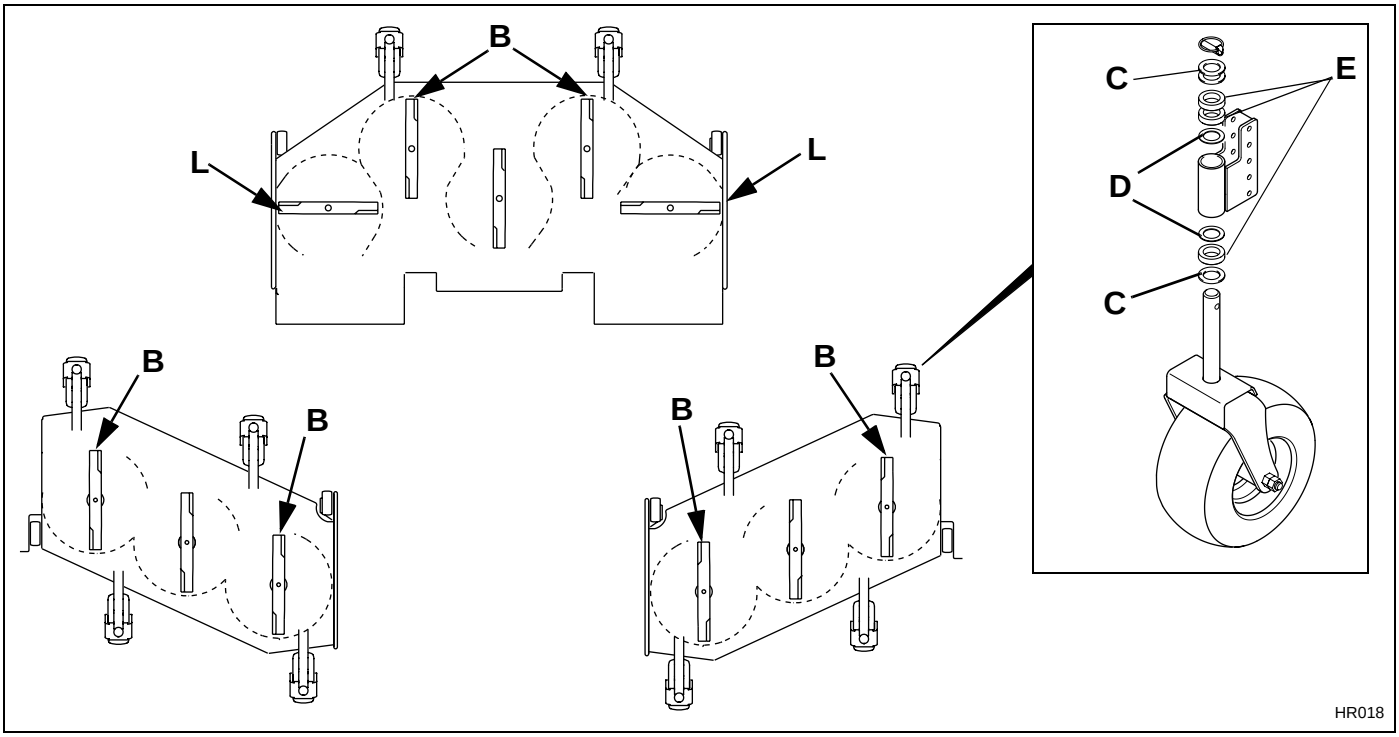


Figure 3A

3.3 SERVICING FRONT DECK

The front deck can be raised and tilted up to improve access to the cutting unit and blades for service and cleaning. Be sure to disengage all drives, engage parking brake, stop engine and remove ignition key before working around deck.

To tilt front deck up to its service position:

1. Rotate anti-sway mechanism **(F)**, located under left side floor panel, to Service position. Figure 3C
2. Start engine and raise deck until rear gauge wheels are off ground. Stop engine.
3. Remove cut height adjustment pins from gauge wheel bracket so yoke assembly floats freely.
4. Start engine and raise deck to full up position. Stop engine.
5. Manually lift and rotate front of deck up until it is securely latched.

⚠ WARNING

The front deck is heavy and could cause serious injury or damage if dropped. Always use proper lifting techniques when lifting or lowering the front deck to the service position.

When lowering deck, pulling latch out will release the full weight of the deck. Make sure anyone assisting in this procedure is made aware of this before the latch is released.

To lower deck after servicing:

1. Lift up on deck and pull locking latch **(A)** out. Manually lower and pivot deck until supported by lift arms. To prevent personal injury or damage to deck or lift arms, **DO NOT** allow deck to drop from service position.
2. Start engine and lower deck until it is level and caster wheels are just above ground. Stop engine.
3. Insert height adjustment pin for rear casters to match cutting height. Figure 3F
4. Rotate anti-sway mechanism **(F)** to it's operating position. Figure 3C

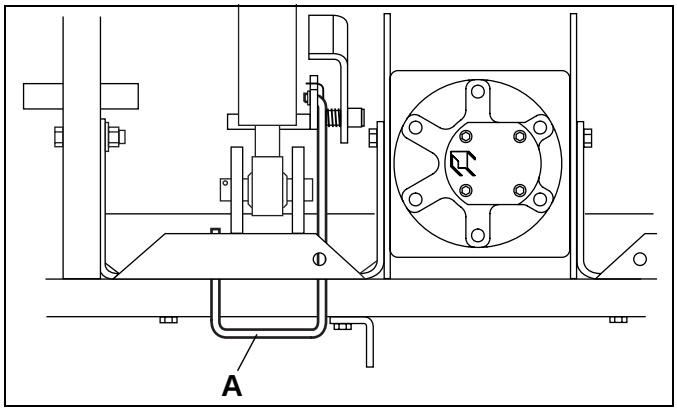


Figure 3B

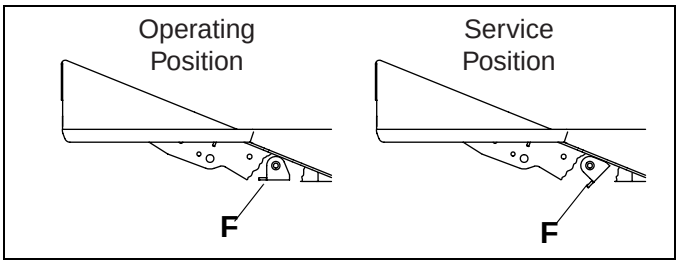


Figure 3C

3.4 WINGLET ADJUSTMENT

1. Winglets must be adjusted to front deck to prevent scalping and possible damage to deck winglets.
2. Rotate front deck blades to positions shown in **Figure 3A**.
3. Measure the height from the ground to the front edge of the center front deck blade **(B)** and the outside edges of winglet blades **(L)**. Add or remove shims **(G)** as required between pad **(H)** and support bracket of winglets, until all front deck blades are at the same height.
4. Store excess shims **(G)** above support bracket.
5. Adjust front winglet support arms **(J)** up or down as required until arm is resting against stop **(K)**.

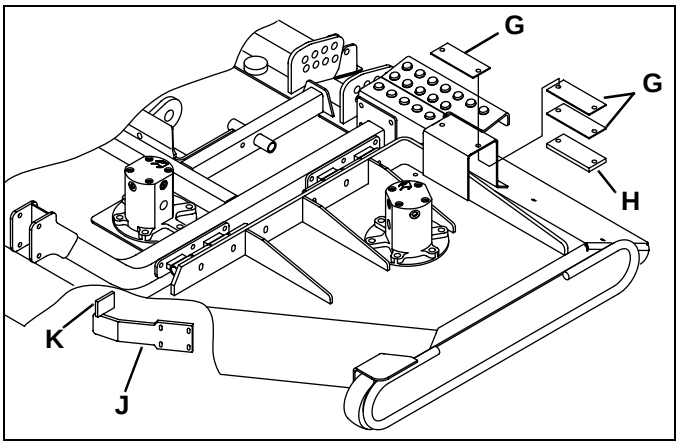


Figure 3D

3.5 CUTTING HEIGHT

Cutting height for decks can be adjusted from 1 to 5-1/2 in. (25-125 mm) in 1/2 in. (13 mm) increments. Actual cutting height may vary somewhat from the heights given depending on turf conditions and other factors.

Note: *When cutting undulating areas, lower cutting heights may cause scalping. Adjust height accordingly to prevent turf damage.*

1. Park the tractor on a flat, level surface. Raise the decks until the caster wheels are raised off the ground enough so caster wheels can be removed from deck. Place blocks under decks so they are supported on all sides.

> **⚠ WARNING**
>
> To prevent serious injury, lower deck until it is resting completely on the supports. This will prevent it from accidentally lowering while making adjustments. Disengage all drives, engage parking brake, stop engine and remove ignition key.

   To remove inside, front caster from side decks raise the decks to their full upright position and lock in the transport position.

2. Figure 3E shows the height adjustment decal for the casters.

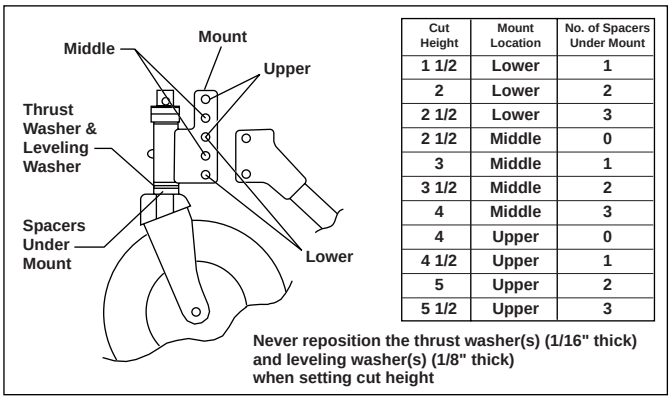
   Column 1 - Height of cut
   Column 2 - Mount Location
   Column 3 - Arrangement of spacers

   Adjust spacers in quantity listed. Store extra spacers on top of spindle. If necessary, reposition wheel mount in holes indicated for height of cut.

   IMPORTANT: *Do not reposition the thin thrust washers (1/16") and leveling washers (1/8") on the spindle. These washers should remain in the same position and quantity they were originally installed. They need only be repositioned if needed to level new casters or decks, Section 3.2*

3. To adjust rear gauge wheels on front deck refer to Figure 3F. Raise front deck approximately 12" and support underneath with blocks. Lower deck so it is completely resting on blocks

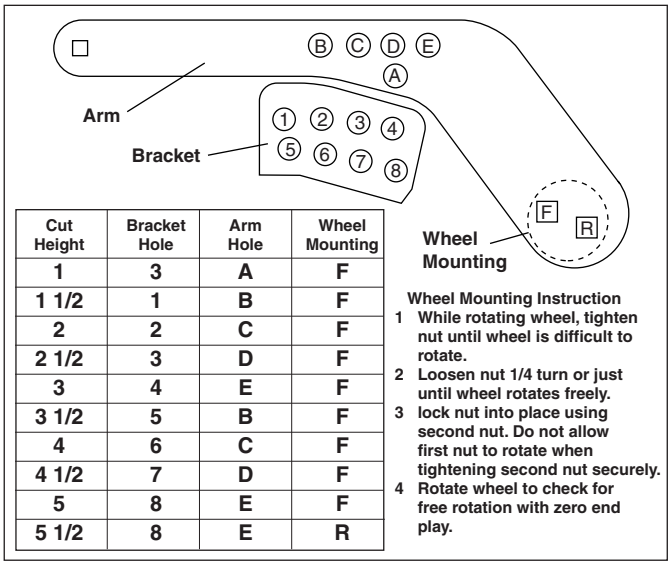
4. Remove pin from rear gauge wheel yoke and reposition in bracket for desired height of cut. When setting cutting height at 5-1/2", gauge wheel must be repositioned in arm. Follow wheel mounting instructions on decal, Figure 3F.



Cut Height	Mount Location	No. of Spacers Under Mount
1 1/2	Lower	1
2	Lower	2
2 1/2	Lower	3
2 1/2	Middle	0
3	Middle	1
3 1/2	Middle	2
4	Middle	3
4	Upper	0
4 1/2	Upper	1
5	Upper	2
5 1/2	Upper	3

Never reposition the thrust washer(s) (1/16" thick) and leveling washer(s) (1/8" thick) when setting cut height

Figure 3E



Cut Height	Bracket Hole	Arm Hole	Wheel Mounting
1	3	A	F
1 1/2	1	B	F
2	2	C	F
2 1/2	3	D	F
3	4	E	F
3 1/2	5	B	F
4	6	C	F
4 1/2	7	D	F
5	8	E	F
5 1/2	8	E	R

Wheel Mounting Instruction
1. While rotating wheel, tighten nut until wheel is difficult to rotate.
2. Loosen nut 1/4 turn or just until wheel rotates freely.
3. lock nut into place using second nut. Do not allow first nut to rotate when tightening second nut securely.
4. Rotate wheel to check for free rotation with zero end play.

Gauge Wheel Adjustment for Front Deck

Figure 3F

Tire pressure

Check air pressure in caster tires, while tires are cool. Maintain air pressure between 20-25 psi (138-173 kPa) to improve accuracy of cutting height.

Note: *It is important to keep inflation pressures on all caster and gauge tires equal, within the range specified, to ensure an accurate, level cut.*

3.6 PARKING BRAKE

The brake switch is part of the operator back-up system and senses when the parking brake is engaged. If this switch fails the machine may not start and the operator back-up system will not operate correctly.

To adjust switch:

1. Place the parking brake in its full upright (engaged) position.
2. Adjust switch **(C)** by pivoting switch mounting bracket **(B)**. Align sensing area on switch with brake handle **(D).**
3. Adjust gap between sensing area on switch and brake lever to 1/16 - 1/8” (1.5 - 3 mm). To adjust gap use shims **(E)** or #10 washers **(F)** as required between switch and switch mount.
4. When properly installed the switch will be closed when the parking brake is engaged and open when the brake is disengaged.

Important: Always check operator back-up system after replacing or adjusting switch. (See Safety and Operation Manual)

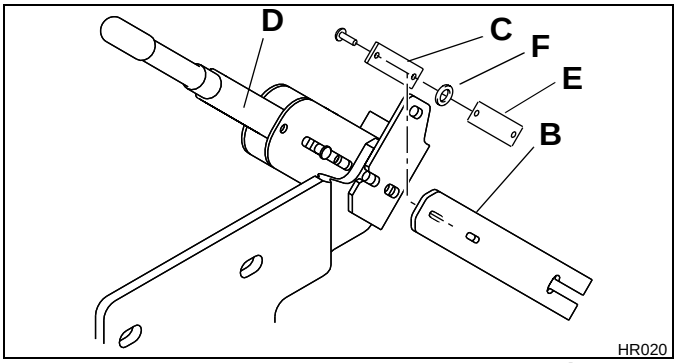


Figure 3G

3.7 NEUTRAL ADJUSTMENT

Important: The neutral adjustment on the drive pump is preset at the factory on all new tractors and replacement pumps. Further adjustment is required **only** if the pump has been disassembled for service or neutral lever bracket **(F)** has become loose.

To adjust neutral on pump:

1. Disconnect traction pedal linkage from pump. Remove switch mounting bracket from pump.
2. Place tractor securely on jack stands so **All** wheels are raised off ground.
3. Check that tow valve **(H)** is completely closed.
4. Loosen screws **(G)** holding pump return arm bracket just enough so it can be moved.
5. Engage parking brake and set PTO switch to neutral.

   The neutral sensing switch must be closed in order to start the tractor. At this point the switch may not yet be assembled to pump. To close switch so engine can be started, place it face down on metal frame.
6. Start engine and observe wheels. Rotate bracket **(F)** in slotted holes until wheels do not turn. Turn off engine and tighten bracket in place.
7. Connect traction pedal linkage, Section 3.11, and install and adjust switches, Sections 3.8 and 3.9.
8. Start engine and check operation of traction pedal. Wheels must not turn when pedal returns to neutral.

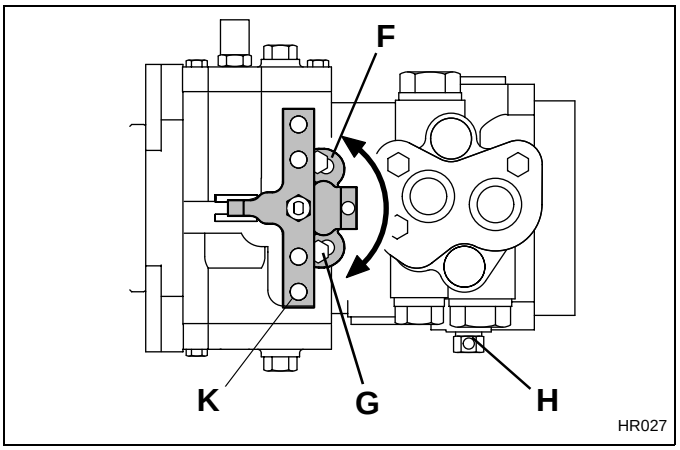


Figure 3H

3.8 NEUTRAL SENSING SWITCH

The neutral sensing switch is part of the operator backup system. It is designed to prevent the tractor from starting unless the traction pedal is in neutral. If this switch fails or is out of adjustment the tractor will not start.

1. Make sure drive pump and traction pedal linkage are adjusted to neutral. Sections 3.7 and 3.11.
2. Position switch so pointer **(A)** on activator plate is centered over sensing area on switch.
3. Adjust switch so gap between sensing surface on switch and end of pointer is between 1/16” - 1/8” (1.5 - 3 mm). Secure switch in this position.
4. After adjustment check operation of operator backup system.

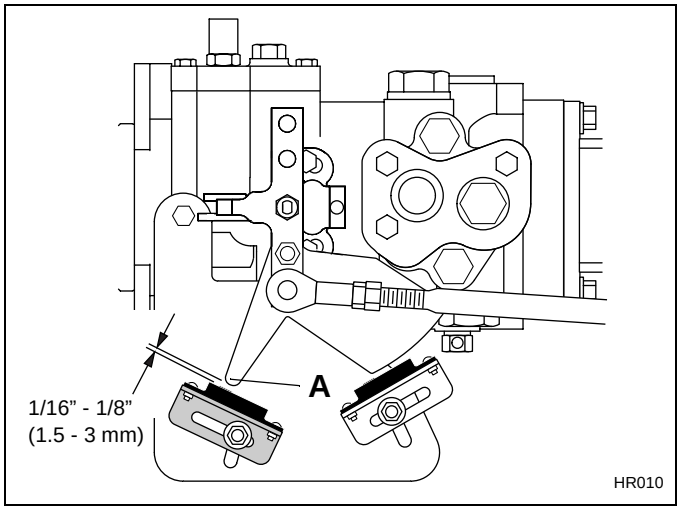


Figure 3I

3.9 FORWARD SENSING SWITCH

The forward sensing switch allows the tractor to operate in four wheel drive only with the traction pedal in its forward position. When operating in reverse the switch opens and returns the tractor to two wheel drive. If four wheel drive fails to operate, check adjustment and operation of sensing switch.

1. Make sure drive pump, traction pedal linkage and neutral sensing switch are adjusted to neutral, Sections 3.7, 3.11 and 3.8.
2. Adjust switch so gap between sensing surface on switch and edge of activator plate is between 1/16” - 1/8” (1.5 - 3 mm).
3. Disconnect switch from wiring harness and connect a continuity meter across switch leads **(B)**. With traction pedal in neutral, slide switch back until it opens, then forward until it closes. Secure switch in this position.
4. With continuity meter still attached check adjustment by pressing traction pedal.

   Switch closed - traction pedal in neutral and during full forward range of pedal.

   Switch open - Full reverse range of pedal.
5. Connect switch to wiring harness and check operation of four wheel drive.

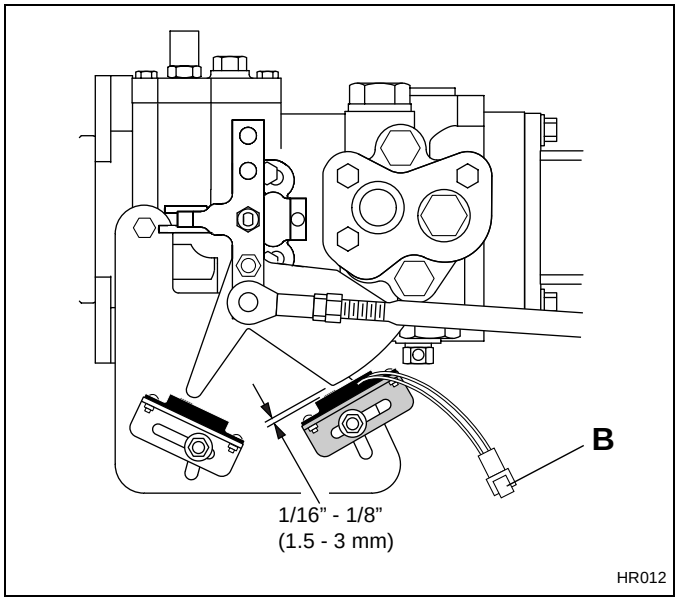


Figure 3J

3.10 LIFT LIMIT SWITCHES

The rotation of the cutting blades is controlled by limit switches positioned on the tractor frame near the lift arms for each deck. When a deck is raised the switch opens and automatically disengages the cutting blades. As the deck is lowered, the switch closes and the blades engage. If a switch fails, the cutting blades will not engage when lowered.

To adjust limit switches:

1. Park tractor on a level surface.
2. Start tractor and raise or lower decks until the highest point on the top corner of the deck reaches the height shown in Figure 3K.
3. Shut off engine and remove key. Support decks using blocks. This will prevent them from accidently lowering while making adjustments.
4. Position switch so sensing area **(C)** on switch is centered over leading edge **(A)** of activator plate on lift arm.
5. Adjust gap between sensing area on switch and activator plate on lift arm to 1/16”-1/8” (1.5 - 3 mm). To adjust gap for front lift arm use shims **(D)** or #10 flat washers **(B)** between switch and switch mount.

Check operation of limit switches. Blades must stop rotating as decks are raised above heights shown.

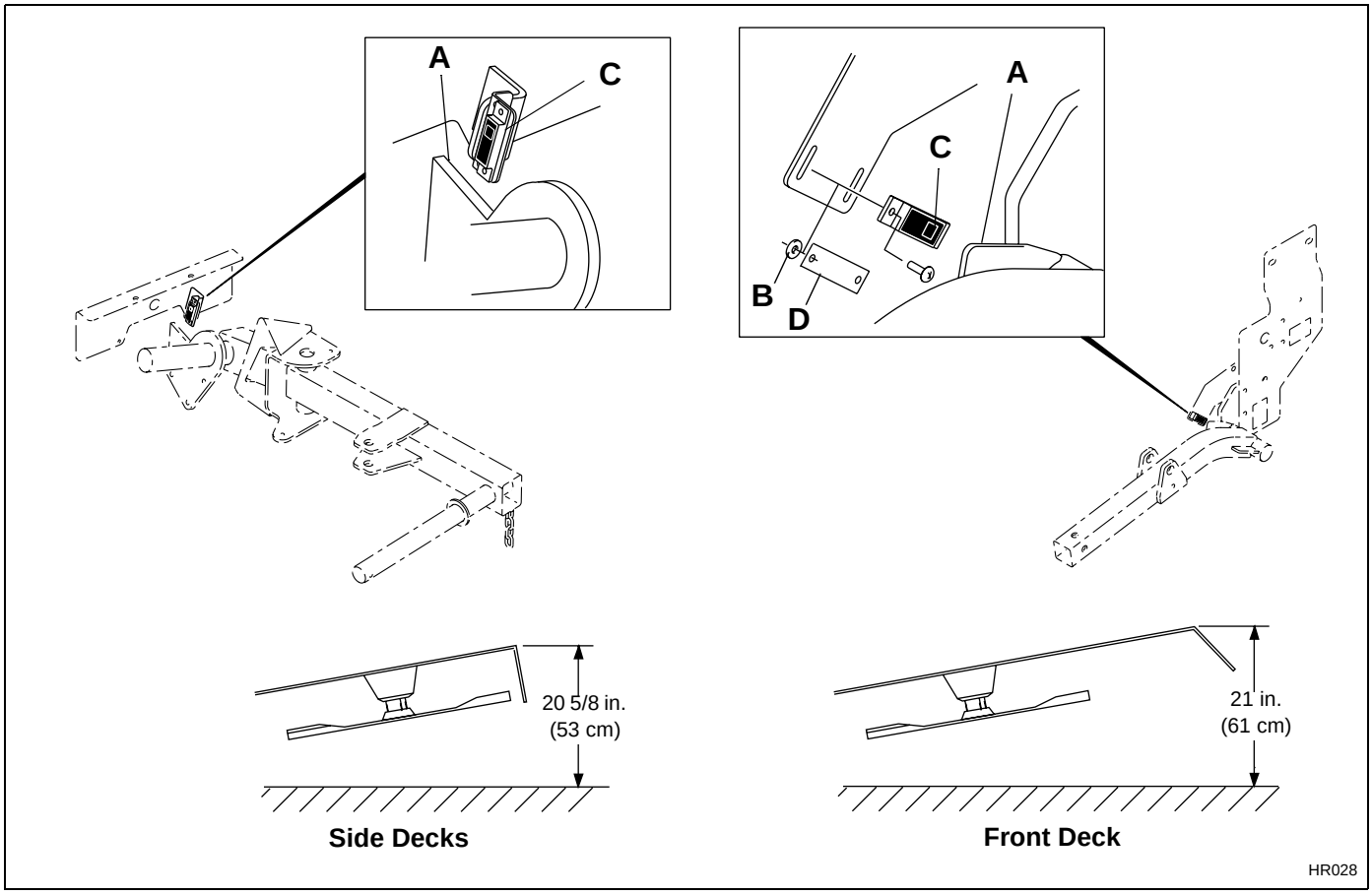


Figure 3K

3.11 TRACTION PEDAL

The traction pedal must be adjusted so the pump is at full stroke when the pedal is fully depressed in the forward position.

1. Make sure return arm **(K-Figure 3H)** on pump is adjusted to neutral, Section 3.7.
2. Push traction pedal forward **(I)** until it touches floor panel and hold in this position.
3. Adjust turn buckle **(J)** until you feel the return arm hit the internal stop in pump. Backoff rod 2-3 turns from this position. This ensures that the traction pedal bottoms out before the return arm.

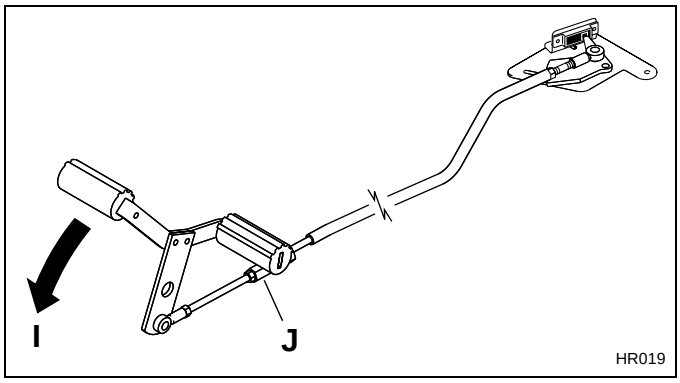


Figure 3L

3.12 STEERING TOE-IN

1. Turn wheels to straight ahead position.
2. Loosen jam nuts **(M)** on both ends of tie rod **(N)**.
3. Turn tie rod **(N)** to provide proper toe-in. Toe-in must not exceed **X** + 1/4” (6.3 mm). Tighten jam nuts **(M)**.

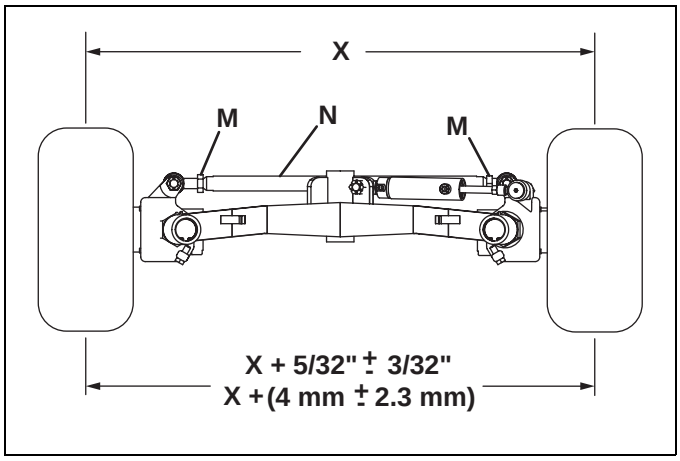


Figure 3M

3.13 STEERING STOP BOLTS

1. Steering toe-in must be set before adjusting stop bolts. If toe-in is changed, stop bolts must be re-adjusted.
2. Turn stop bolts **(P and Q)** out as far as possible without removing them.
3. Turn steering wheel to the right until right rear tire is at a 45° angle to steering axle. Thread stop bolt **(P)** in until bolt touches axle.
4. Turn steering wheel to the left until left rear tire is at a 45° angle to steering axle. Thread stop bolt **(Q)** in until bolt touches axle.

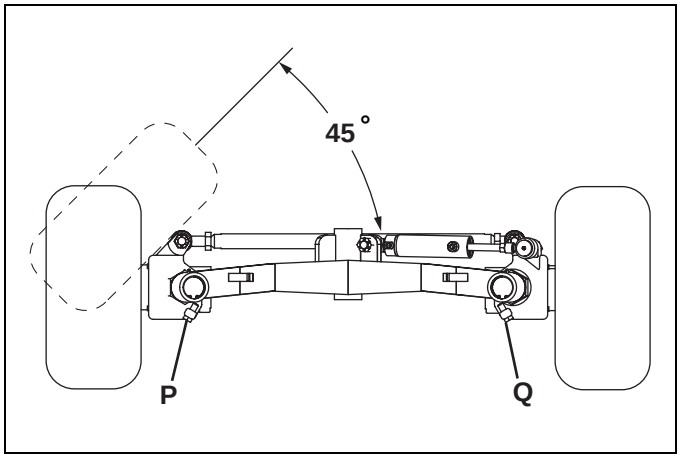


Figure 3N

3.14 TORQUE SPECIFICATION

CAUTION

All torque values included in these charts are approximate and are for reference only. Use of these torque values is at your sole risk. Jacobsen is not responsible for any loss, claim, or damage arising from the use of these charts. **Extreme caution should always be used when using any torque value.**

Jacobsen uses Grade 5 Plated bolts as standard, unless otherwise noted. For tightening plated bolts, use the value given for lubricated.

AMERICAN NATIONAL STANDARD FASTENERS

SIZE	UNITS	GRADE 5		GRADE 8		SIZE	UNITS	GRADE 5		GRADE 8	
		Lubricated	Dry	Lubricated	Dry			Lubri-cated	Dry	Lubri-cated	Dry
#6-32	in-lb (Nm)	–	20 (2.3)	–	–	7/16-14	ft-lb (Nm)	37 (50.1)	50 (67.8)	53 (71.8)	70 (94.9)
#8-32	in-lb (Nm)	–	24 (2.7)	–	30 (3.4)	7/16-20	ft-lb (Nm)	42 (56.9)	55 (74.6)	59 (80.0)	78 (105)
#10-24	in-lb (Nm)	–	35 (4.0)	–	45 (5.1)	1/2-13	ft-lb (Nm)	57 (77.2)	75 (101)	80 (108)	107 (145)
#10-32	in-lb (Nm)	–	40 (4.5)	–	50 (5.7)	1/2-20	ft-lb (Nm)	64 (86.7)	85 (115)	90 (122)	120 (162)
#12-24	in-lb (Nm)	–	50 (5.7)	–	65 (7.3)	9/16-12	ft-lb (Nm)	82 (111)	109 (148)	115 (156)	154 (209)
1/4-20	in-lb (Nm)	75 (8.4)	100 (11.3)	107 (12.1)	143 (16.1)	9/16-18	ft-lb (Nm)	92 (124)	122 (165)	129 (174)	172 (233)
1/4-28	in-lb (Nm)	85 (9.6)	115 (13.0)	120 (13.5)	163 (18.4)	5/8-11	ft-lb (Nm)	113 (153)	151 (204)	159 (215)	211 (286)
5/16-18	in-lb (Nm)	157 (17.7)	210 (23.7)	220 (24.8)	305 (34.4)	5/8-18	ft-lb (Nm)	128 (173)	170 (230)	180 (244)	240 (325)
5/16-24	in-lb (Nm)	173 (19.5)	230 (26.0)	245 (27.6)	325 (36.7)	3/4-10	ft-lb (Nm)	200 (271)	266 (360)	282 (382)	376 (509)
3/8-16	ft-lb (Nm)	23 (31.1)	31 (42.0)	32 (43.3)	44 (59.6)	3/4-16	ft-lb (Nm)	223 (302)	298 404	315 (427)	420 (569)
3/8-24	ft-lb (Nm)	26 (35.2)	35 (47.4)	37 (50.1)	50 (67.8)	7/8-14	ft-lb (Nm)	355 (481)	473 (641)	500 (678)	668 (905)

METRIC FASTENERS

SIZE	UNITS	4.6		8.8		10.9		12.9		Non Critical Fasteners into Aluminum
		Lubricated	Dry	Lubricated	Dry	Lubricated	Dry	Lubricated	Dry	
M4	Nm (in-lb)	–	–	–	–	–	–	3.83 (34)	5.11 (45)	2.0 (18)
M5	Nm (in-lb)	1.80 (16)	2.40 (21)	4.63 (41)	6.18 (54)	6.63 (59)	8.84 (78)	7.75 (68)	10.3 (910	4.0 (35)
M6	Nm (in-lb)	3.05 (27)	4.07 (36)	7.87 (69)	10.5 (93)	11.3 (102)	15.0 (133)	13.2 (117)	17.6 (156)	6.8 (60)
M8	Nm (in-lb)	7.41 (65)	9.98 (88)	19.1 (69)	25.5 (226)	27.3 (241)	36.5 (323)	32.0 (283)	42.6 (377)	17.0 (150)
M10	Nm (ft-lb)	14.7 (11)	19.6 (14)	37.8 (29)	50.5 (37)	54.1 (40)	72.2 (53)	63.3 (46)	84.4 (62)	33.9 (25)
M12	Nm (ft-lb)	25.6 (19)	34.1 (25)	66.0 (48)	88.0 (65)	94.5 (70)	125 (92)	110 (81)	147 (108)	61.0 (45)
M14	Nm (ft-lb)	40.8 (30)	54.3 (40)	105 (77)	140 (103)	150 (110)	200 (147)	175 (129)	234 (172)	94.9 (70)

4.1 GENERAL

WARNING

Before you clean, adjust, or repair this equipment, disengage all drives, lower implements to the ground, engage parking brake, stop engine and remove key from ignition switch to prevent injuries

Make sure the tractor is parked on a solid and level surface. Never work on a tractor that is supported only by the jack. Always use jack stands.

1. Adjustment and maintenance should always be performed by a qualified technician. If proper adjustments cannot be made, contact an Authorized Jacobsen Dealer.
2. Inspect the equipment on a regular basis, establish a maintenance schedule and keep detailed records.
   a. Keep the equipment clean.
   b. Keep all moving parts properly adjusted and lubricated.
   c. Replace worn or damaged parts before operating the machine.
   d. Keep all fluids at their proper levels.
   e. Keep shields in place and all hardware securely fastened.
   f. Keep tires properly inflated.
3. Do not wear jewelry or loose fitting clothing when making adjustments or repairs.
4. Use the illustrations in the Parts List as reference for the disassembly and reassembly of components.
5. Recycle or dispose of all hazardous materials (batteries, fuel, lubricants, anti-freeze, etc.) according to local, state or federal regulations.

4.2 INSPECTING BLADES

1. Every 50 hours of operation or whenever mower is removed from tractor, carefully examine the blades to make sure they are in good operating condition. Blades showing any bends **(G)**, grooves **(H)** or cracks (**J)** must be replaced.

CAUTION

Use care when checking blades to avoid pinching hands and fingers between blade ends.

WARNING

Never attempt to straighten, weld or repair a damaged blade. Always replace a damaged blade.

2. Any of the above conditions can cause a piece of the blade to break away and be hurled from the mower; causing very serious injury to bystanders or property damage.
3. A bent blade could have a microscopic crack (G) that can grow and allow a piece of the blade to break. Bent blades will also create vibration and other stress on the machinery.
4. Dust or sand particles can wear a dangerous groove in the blade (H) between the air vanes and the flat portion of the blade that will rapidly grow and produce a crack (J), permitting a piece of the vane to break off.

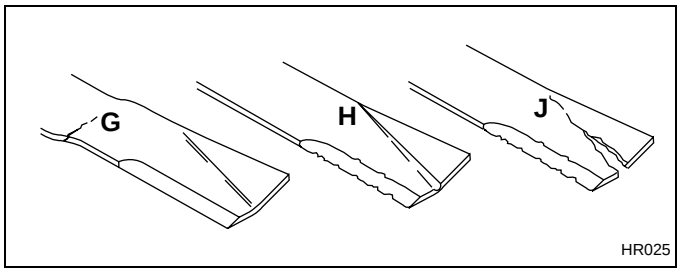


Figure 4A

4.3 SHARPENING BLADES

1. Place a wooden block between the blade and mower housing to stop the blade from moving. To remove blade, turn screw holding blade counterclockwise.

WARNING

The mower blades can develop sharp edges. Use caution whenever servicing and handling.

2. When dressing or sharpening the blade, do not follow the original pattern of grind as shown in **(A)**. Grind new cutting edges at an angle as shown in **(B)**.

   If the maximum total loss of the blade reaches 1/2 in., (13 mm), do not sharpen further, replace blade.

WARNING

Resharpening the blade beyond the allowable 1/2 in., (13 mm) may allow blade tip break off and be thrown from the mower. Such an incident can cause very serious injury to bystanders and/or property damage.

3. Make sure an equal amount of material is removed from both sides of blade to prevent having an unbalanced blade. An unbalanced blade will cause excessive vibration and may damage the mower.
4. Use a blade balancer to check the blade after sharpening.
5. Attach blade to mower. Install blades so cutting edges **(C)** face the direction of rotation as shown in Figure 4C. Beveled cutting edge of blade must face in toward deck housing.

   Torque center mounting screw holding blade to 75 to 90 ft. lb. (100 to 120 Nm).

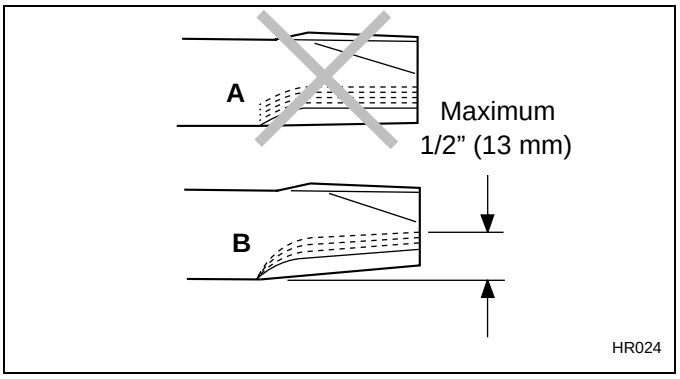


Figure 4B

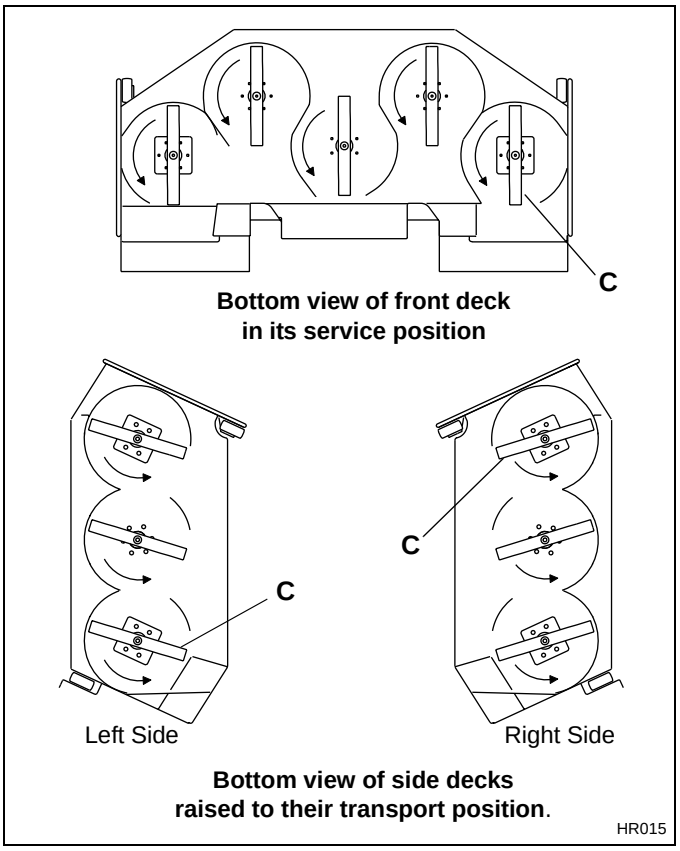


Figure 4C

4.4 ENGINE

IMPORTANT: ***A separate Engine Manual, prepared by the engine manufacturer, is supplied with this tractor. Read the engine manual carefully until you are familiar with the operation and maintenance of the engine. Proper attention to the engine manufacturer's directions will assure maximum service life of the engine. To order replacement engine manuals contact the engine manufacturer.***

The proper break-in of a new engine can make a considerable difference to the performance and life of the engine.

During the break-in period, Jacobsen recommends the following:

1. During the first 50 hours of operation, a new engine should be allowed to reach an operating temperature of at least 140°F (60°C) prior to operation at full load.
2. Check the engine oil level twice daily during the first 50 hours of operation. Higher than normal oil consumption is not uncommon during the initial break-in period.
3. Change engine oil and oil filter element after first 50 hours of operation.
4. Check and adjust fan and alternator belts.
5. Refer to Section 4.23 and Engine Manual for specific maintenance intervals and procedures.

If the injection pump, injectors or the fuel system require service, contact an authorized Jacobsen Dealer.

Note: *The tractor is designed to operate and cut most efficiently at the preset governor setting. Do not change the engine governor settings or overspeed the engine.*

4.5 ENGINE OIL

Check the engine oil at the start of each day, before starting the engine. If the oil level is low, remove oil filler cap and add oil as required up to MAX mark on dipstick.

Perform initial oil change after first 25 hours of operation and every 250 hours thereafter. See Engine Manual.

Use engine oil with API classification CD-II, CE, CF-4. See Engine Manual for complete specifications.

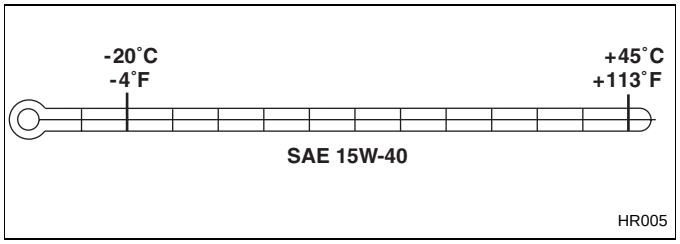


Figure 4D

4.6 MUFFLER AND EXHAUST

⚠ WARNING

Exhaust fumes contain carbon monoxide that is toxic and can be fatal when inhaled.

NEVER operate an engine without proper ventilation.

To protect from carbon monoxide poisoning, inspect the complete exhaust system regularly and always replace a defective muffler. If you notice a change in the color or sound of the exhaust, stop the engine immediately. Identify the problem and have the system repaired.

Torque all exhaust manifold hardware evenly. Tighten or replace exhaust clamps.

4.7 AIR FILTER

Check the service indicator daily. Replace air cleaner element immediately when red band becomes visible **(A)**

Do not remove the element for inspection or cleaning. Unnecessary removal of the filter increases the risk of injecting dust and other impurities into the engine.

When service is required, first clean the outside of the filter housing; then remove the old element as gently as possible and discard.

1. Carefully clean the inside of the filter housing without allowing dust into the air intake.
2. Inspect the new element. Do not use a damaged element and never use an incorrect element.
3. Assemble the new element and make sure it seats properly. Reset the indicator by depressing button **(B)**.
4. Reassemble cap making sure it seals completely around the filter housing. Dust evacuator **(C)** must be facing down.
5. Check all hoses and air ducts. Tighten hose clamps.

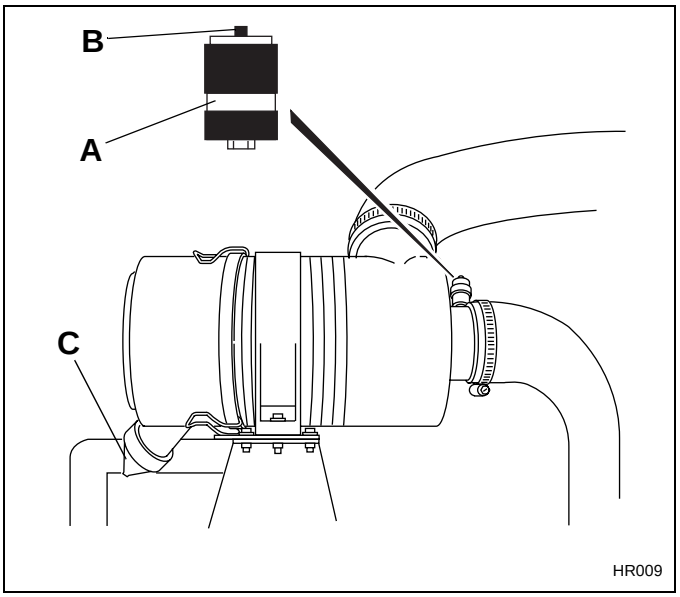


Figure 4E

4.8 FUEL

Handle fuel with care - it is highly flammable. Use an approved container, the spout must fit inside the fuel filler neck. Avoid using cans and funnels to transfer fuel.

⚠ WARNING

Never remove the fuel cap from the fuel tank, or add fuel, when the engine is running or while the engine is hot.

Do not smoke when handling fuel. Never fill or drain the fuel tank indoors.

Use4 care to avoid spilling fuel. If fuel is spilled, clean it up immediately.

Never handle or store fuel containers near an open flame or any device that may create sparks and ignite the fuel or fuel vapors.

Be sure to reinstall and tighten fuel cap securely.

- Fill the fuel tank to within 1 in. (25 mm) below the filler neck.
- Use clean, fresh, #2 Diesel fuel. Minimum Cetane Rating 45. Refer to Engine Manual for additional information.
- Replace fuel lines and clamps at the first sign of damage.
- Store fuel according to local, state or federal ordinances and recommendations from your fuel supplier.
- Never overfill or allow the tank to become empty.

Read Engine Owner's Manual for additional fueling information.

4.9 FUEL SYSTEM

Refer to Section 4.23 for specific maintenance intervals.

See Engine Manual for detailed procedures.

Before replacing any filter, thoroughly clean the filter housing and the area around the filter. Dirt must not be allowed to enter into fuel system.

Bleed the fuel system after the fuel filter and lines have been removed, or the fuel tank has become empty.

To change fuel filter:

1. Close fuel valve on tank; then remove and discard the existing filter.
2. Apply a light coat of oil to the gasket and hand tighten new filter.
3. Fill fuel tank. Open fuel valve on tank and bleed the filter. See Engine Manual. Clean any spilled fuel immediately.

4.10 BATTERY

Make absolutely certain the ignition switch is “Off” and the key has been removed before servicing the battery.

⚠ CAUTION

Always use insulated tools, wear protective glasses or goggles and protective clothing when working with batteries. You must read and obey all battery manufacturer’s instructions

Tighten cables securely to battery terminals and apply a light coat of silicone dielectric grease to terminals and cable ends to prevent corrosion. Keep vent caps and terminal covers in place

Keep the cable ends, battery and battery posts clean.

Verify battery polarity before connecting or disconnecting the battery cables.

1. When installing the battery, always assemble the RED, positive (+) battery cable first and the ground, BLACK, negative (-) cable last.
2. When removing the battery, always remove the ground, BLACK, negative (-) cable first and the RED, positive (+) cable last.
3. Make sure battery is properly installed and secured to the battery tray.

⚠ WARNING

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash your hands after handling.**

4.11 JUMP STARTING

Before attempting to “jump start” the tractor, check the condition of the discharged battery. Section 4.10

⚠ WARNING

Batteries generate explosive hydrogen gas. To reduce the chance of an explosion, avoid creating sparks near battery. Always connect the negative jumper cable to the frame of the tractor with the discharged battery, away from the battery.

When connecting jumper cables:

1. Stop the engine on vehicle with good battery.
2. Connect RED jumper cable to the positive (+) terminal on the good battery and to the positive (+) terminal on the “discharged” battery.
3. Connect the BLACK jumper cable from the negative (-) terminal on the good battery to the **frame** of tractor with discharged battery.

After cables have been connected, start the engine on the vehicle with the good battery then start the tractor.

4.12 CHARGING BATTERY

⚠ WARNING

Charge battery in a well ventilated area. Batteries generate explosive gases. To prevent an explosion, keep any device that may create sparks or flames away from the battery.

To prevent injury, stand away from battery when the charger is turned on. A damaged battery could explode.

1. Refer to Section 4.10. Read the Battery and Charger's manual for specific instructions.
2. Whenever possible, remove the battery from the tractor before charging. If battery is not sealed, check that the electrolyte covers the plates in all the cells.
3. Make sure the charger is "Off", then connect the charger to the battery terminals as specified in the charger's manual.
4. Always turn the charger "Off" before disconnecting charger from the battery terminals.

4.13 HYDRAULIC HOSES

⚠ WARNING

To prevent serious injury from hot, high pressure oil, never use your hands to check for oil leaks, use paper or cardboard.

Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin. If fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

1. Always lower implements to ground, disengage all drives, engage parking brake, stop engine and remove key before inspecting or disconnecting hydraulic lines or hoses.
2. Check visible hoses and tubes daily. Look for wet hoses or oil spots. Replace worn or damaged hoses and tubes before operating the machine.
3. The replacement tube or hoses must be routed in the same path as the existing hose, do not move clamps, brackets and ties to a new location.
4. Thoroughly inspect all tubes, hoses and connections every 300 hours.

   IMPORTANT: The hydraulic system can be permanently damaged if the oil becomes contaminated. Before disconnecting any hydraulic component, clean the area around the fittings and the hose ends to keep impurities out of the system.

   a. Before disconnecting any hydraulic component, tag or mark the location of each hose then clean the area around the fittings.

   b. As you disconnect the component, be prepared to assemble plugs or caps to the hose ends and open ports. This will keep impurities out of the hydraulic system and also prevent oil spills.

   c. Make sure "O" rings are clean and hose fittings are properly seated before tightening.

   d. Keep the hose from twisting. Twisted hoses can cause couplers to loosen as the hose flexes during operation resulting in oil leaks.

   e. Kinked or twisted hoses can restrict the oil flow causing the system to malfunction and the oil to overheat and also lead to hose failure.

4.14 HYDRAULIC OIL

Refer to Section for specific maintenance intervals.

Drain and replace the hydraulic oil if you notice the presence of water or foam in the oil, a rancid odor (indicating excessive heat), or after a major component failure,

Always replace both hydraulic filters when oil filter light stays on or when changing oil.

To change hydraulic oil:

1. Clean the area around the oil cap to prevent impurities from entering and contaminating the system.
2. Remove drain plug from bottom of tank.
3. After oil has drained install drain plug and fill with Jacobsen Hydraulic oil.
4. Purge air from system.
   a. Operate all tractor functions for about 5 minutes to purge air out of the system and stabilize the oil level. During this time, the oil level alarm may sound.
   b. Once the level has stabilized and the air is purged, fill the tank to the full mark on dipstick. Start engine and check that oil alarm remains off.

4.15 HYDRAULIC FILTERS

The hydraulic system is protected by two 10 micron filters; a charge filter **(B)** and return line filter **(A)**. Flow though the filters is monitored during operation. When pressure drop across the filters is too high the hydraulic oil filter warning light will come on. To ensure continued protection to the hydraulic system, replace filters as soon as possible if light continues to remain on even after hydraulic fluid has warmed up.

Note: *The warning light will normally come on immediately after starting tractor and remain on until oil has warmed to operating temperature. Wait until oil has warmed up and light goes out before operating tractor.*

To replace hydraulic filters:

Replace filters once a year when changing hydraulic fluid, or when filter warning light on instrument panel remains on.

The return line filter is mounted to the left side of the oil cooler. The charge filter is mounted to the lower part of the tractor frame behind the left side lift arm.

1. Remove the old filters.

   Note: *Some hydraulic fluid will drain when removing the lower charge filter. Place a drip pan under filter before removing.*
2. Install new filters. Hand tighten only.
3. Operate engine at idle speed with hydraulic system in neutral for five minutes. The oil level alarm may sound during this time.
4. Check hydraulic oil level in reservoir and fill to full mark on dipstick.

4.16 RADIATOR & OIL COOLER

⚠ WARNING

To prevent serious bodily injury from hot coolant or steam blow-out, never attempt to remove the radiator cap while the engine is running. Stop the engine and wait until it is cool. Even then, use extreme care when removing the cap.

⚠ CAUTION

Do not pour cold water into a hot radiator. Do not operate engine without a proper coolant mixture. Install cap and tighten securely.

Check coolant level daily. Radiator should be full and recovery bottle should be up to the **cold** mark.

If you have to add coolant more than once a month, or add more than one quart at a time, have a Jacobsen Dealer check the cooling system.

Drain and refill annually. Remove the radiator cap, open the engine block drain and the radiator drain. Empty and clean the recovery bottle.

Mix clean water with ethylene glycol based anti-freeze for the coldest ambient temperature. Read and follow the instructions on the anti-freeze container and engine manual.

Keep screen, oil cooler and radiator air passages clean. Use compressed air (30 psi maximum) to clean the fins.

Front Screen

Inspect front screen **(B)** daily and clean as required to remove grass clippings, leaves and other debris that may restrict air flow through oil cooler and radiator.

To remove screen, remove end cap **(A)** from left side of oil cooler. Slide screen out from side and blow out from back side using compressed air.

Oil Cooler and Radiator

Inspect oil cooler and radiator daily and clean as required to maintain good air flow.

1. Remove screen **(B)** from front of oil cooler.
2. Unfasten knobs **(C)** located on top of oil cooler and remove plastic shield from front of oil cooler.
3. Release prop rod **(D)** at bottom of cooler and position hydraulic line to the front of it so hose can move freely. Swing cooler up and away from radiator as shown **(E)**. Insert prop rod into hole in frame to hold oil cooler in its service position.
4. Use a blow gun to clean the radiator and oil cooler fins.
5. After cleaning, swing cooler back in place in front of radiator. Secure prop rod **(D)** down so it holds hydraulic line running behind it in place.
6. Replace front screen and shields, and install knobs on top of oil cooler to secure assembly in place.

HR022

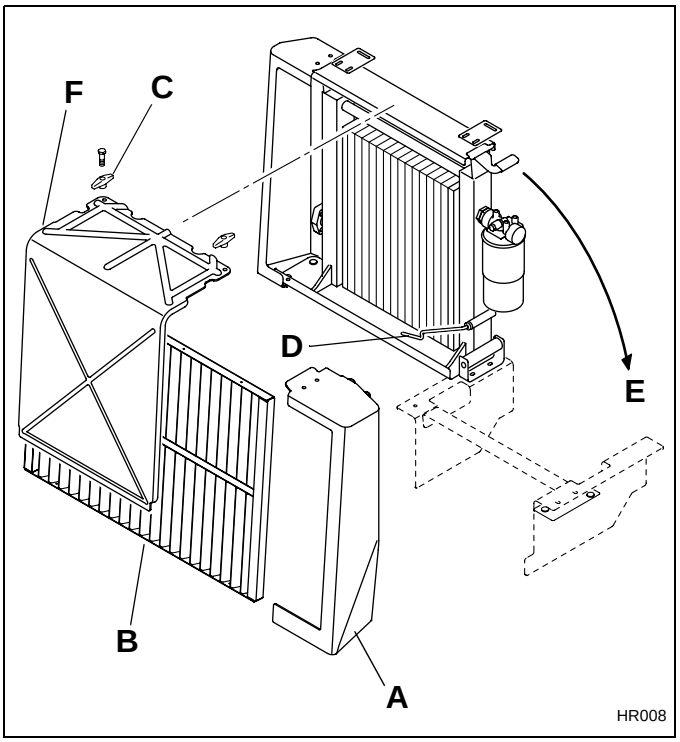


Figure 4F

4.17 CARE AND CLEANING

Wash the tractor and implements after each use. Keep the equipment clean.

Note: Do *not wash any portion of the equipment while it is hot. Do not use high pressure spray or steam. Use cold water and automotive cleaners.*

1. Use compressed air to clean engine and radiator fins. A special blow gun is available through your Jacobsen Dealer.
2. Use only fresh water for cleaning your equipment.

Note: *Use of salt water or affluent water has been known to encourage rust and corrosion of metel parts resulting in premature deterioration or failure. Damage of this nature is not covered by the factory warranty.*

3. Do not spray water directly at the instrument panel, ignition switch, controller or any other electrical components, or at bearing housings and seals.
4. Clean all plastic or rubber trim with a mild soap solution or use commercially available vinyl/rubber cleaners.

Repair damaged metal surfaces and use Jacobsen touch-up paint. Wax the equipment for maximum paint protection.

⚠ CAUTION

Clean grass and debris from cutting units, drives, muffler and engine to prevent fires.

⚠ WARNING

NEVER use your hands to clean cutting units. Use a brush to remove grass clippings from blades. Blades are extremely sharp and can cause serious injuries.

4.18 ELECTRICAL SYSTEM

⚠ CAUTION

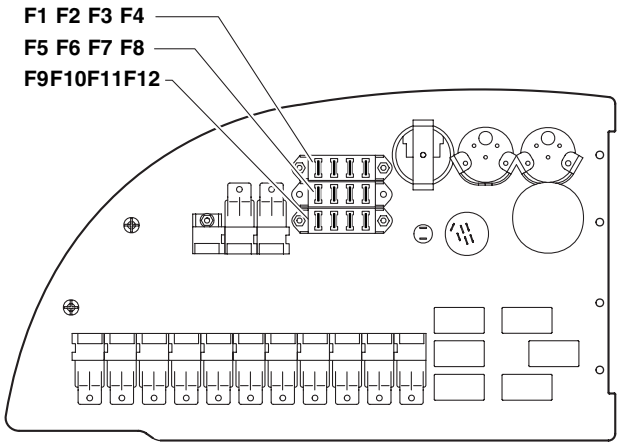
Always turn the igniton switch off and remove the negative battery cable (Black) before inspecting or working on the electrical system.

General precautions that can be taken to reduce electrical problems are listed below.

1. Make certain all terminals and connections are clean and properly secured.
2. Check the operator backup system, fuses and circuit breakers regularly.

   If the operator backup system does not function properly and the problem cannot be corrected, contact an authorized Jacobsen Dealer.
3. Keep the wire harness and all individual wires away from moving parts to prevent damage.
4. Make sure the seat switch harness is connected to the main wire harness.
5. Check the battery and battery charging circuit.
6. Do not wash or pressure spray around electrical connections and components.

Circuits are protected by a circuit breaker (located above batteries), plus fuses and relays mounted under the instrument panel (See Figure 4G and).



FUSES

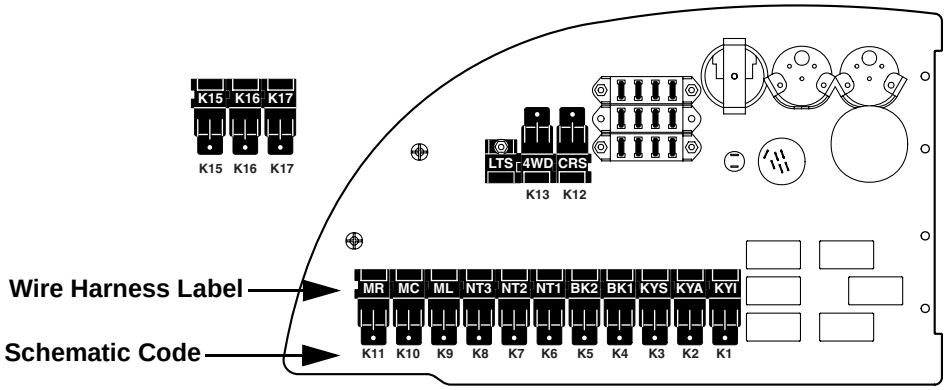
F1	5A	Spare
F2	5A	Spare
F3	15A	Spare
F4	15A	Spare
F5	5A	Ignition
F6	5A	Gauges
F7	5A	Fuel solenoid, Glow Plugs
F8	15A	Seat air system
F9	5A	Cruise Control
F10	5A	4-WD Solenoid
F11	5A	Deck Limit Switches
F12	15A	Deck Valves

HR006

Figure 4G

identifies the location and basic functions of the electrical relays located under the control panel. For more detailed information refer to the electrical schematic in this manual.

Always check Interlock System after servicing the electrical system!


K15 K16 K17
K15 K16 K17
LTS 4WD CRS
K13 K12
Wire Harness Label
Schematic Code
MR MC ML NT3 NT2 NT1 BK2 BK1 KYS KYA KYI
K11 K10 K9 K8 K7 K6 K5 K4 K3 K2 K1

Relay	Description	Function
KYA / K2	Key Switch “A”	Holds fuel stop solenoid valve open when ignition switch is in the RUN position and operator is seated. Activates glow plug timer if engine isn’t running.
KYI / K1	Key Switch “I”	Opens fuel stop solenoid valve when ignition switch is in the START position, power take-off switch is OFF, parking brake and neutral switches are closed.
KYS / K3	Key Switch “S”	Cranks starter motor when ignition switch is in the START position, power take-off switch is OFF, parking brake and neutral switches are closed.
BK1 / K4	Brake -Start	Part of starting circuit. Relay closes when parking brake is engaged.
BK2 / K5	Brake-Run	Disconnects power to cruise control relay (CRS) with parking brake engaged. Disconnects power to the fuel valve when the operator leaves seat with parking brake disengaged.
NT1 / K6	Neutral-Start	Part of starting circuit. Relay closes when traction pedal is in neutral.
NT2 / K7	Neutral-Run	Disconnects power to the fuel stop solenoid valve when operator leaves seat with neutral switch still open (traction pedal pressed).
NT3 / K8	Neutral-Cruise	Disconnects power to cruise control when neutral switch is closed (traction pedal in neutral).
ML / K9	Mow -Left Deck	Energizes solenoid to left side deck valve when deck is lowered and power take-off switch is ON.
MC / K10	Mow-Center Deck	Energizes solenoid to front deck valve when deck is lowered and power take-off switch is ON.
MR / K11	Mow-RIght Deck	Energizes solenoid to right side deck valve when deck is lowered and power take-off switch is ON.
CRS / K12	Cruise Control	Activates cruise control when cruise control switch is closed, traction pedal is pressed and parking brake is disengaged.
4WD / K13	Four Wheel Drive	Energizes solenoid to four wheel drive valve when four wheel drive switch on instrument panel and forward sensing switch on traction pump are closed.
LTS	Lights	Included with light harness kit 5003564. Controls operation of lights.
K15	Run Circuit Cutout	Disables run circuit when keyswitch is turned to START position.
K16	Auxilliary	Provides power to ignition circuit with keyswitch in RUN position. Disables ignition circuit in START position
K17	Ignition	Provides power to gauges, mow circuit, 4WD circuit and seat switch circuit

4.19 TIRES

⚠ CAUTION

Unless you have the proper training tools and experience, DO Not attempt to mount a tire on a rim. Improper mounting can produce an explosion which may result in serious injury.

1. Keep tires properly inflated to prolong tire life. Check inflation pressure while the tires are cool. Inspect tread wear.
2. Check pressure yearly. Use an accurate, low pressure tire gauge.
3. Keep tires inflated to proper pressure

   Tractor: 20-22 psi (138 -152kPa).
   Decks: 20-25 psi (138 -173 kPa)

4.20 WHEEL MOUNTING PROCEDURE

Tractor Wheels

⚠ WARNING

Make sure the tractor is parked on a solid and level surface. Never work on a tractor that is supported only by the jack. Always use jack stands.

If only the front or rear of the tractor is raised, place chocks in front of and behind the wheels that are not raised.

1. Remove dirt, grease and oil from stud thread. Do not lubricate threads.
2. Position wheel on hub and inspect to insure full contact between mounting surface of wheel and hub or brake drum.
3. Finger tighten all hardware then torque hardware in crisis-cross order; always tighten nuts in the top position.

NOTE: *Check and torque lug bolts daily for the first 100 hours of operation.*

4. After recieving new unit or if tires were removed, check and torque lug bolts daily until torque is maintained, 65-75 ft.lbs. (88-102 Nm)

Caster Wheels

To extend bearing life check and adjust caster and gauge wheels every year. Lubricate bearings every 100 hours using NLGI Grade 2 grease.

1. Raise deck so wheels are off ground and can be rotated freely by hand.
2. Check wheels for end play **(I)**. Wheels should rotate freely with zero end play.
3. To eliminate end play, tighten inner nut **(G)** until wheel just begins to bind then loosen it 1/4 turn. Lock inner nut in position using outer nut **(H)**. Do not allow inner nut to rotate while tightening outer nut.
4. Repeat step 2 and check for end play.

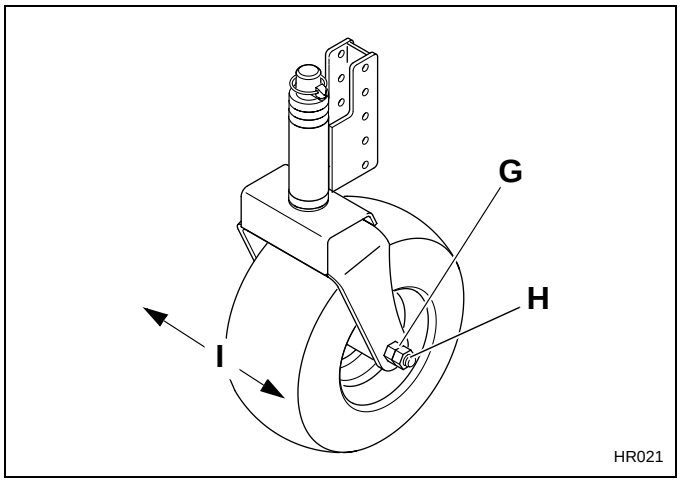


Figure 4H

4.21 ROLLOVER PROTECTION STRUCTURE (ROPS)

A Rollover Protection System (ROPS), designed for this tractor, is available as an optional accessory. If your tractor is equipped with this device, inspect it periodically and follow operating procedures described in Safety and Operation Manual

⚠ CAUTION

Do not loosen or remove bolts, do not weld, drill, modify, bend or straighten a damaged structure.

1. The seat, the seat belt, mounting hardware and any accessories within the ROPS, should be inspected regularly and all damaged parts replaced immediately.
2. Once the ROPS has been subjected to any form of impact it should be replaced.
3. Check and retorque all hardware. All replacement components used for the ROPS must be as specified in the Jacobsen Parts List.

4.22 STORAGE

General

1. Wash the tractor thoroughly and lubricate. Repair and paint damaged or exposed metal.
2. Inspect the tractor, tighten all hardware, replace worn or damaged components.
3. Drain and refill radiator.
4. Clean the tires thoroughly and store the tractor so the load is off the tires. If tractor is not on jack stands, check tires at regular intervals and reinflate as necessary.
5. Keep the machine and all its accessories clean, dry and protected from the elements during storage. Never store equipment near an open flame or spark which could ignite fuel or fuel vapors.

Battery

1. Remove, clean and store battery in upright position in a cool, dry place.
2. Check and recharge battery every 60 to 90 days while in storage.
3. Store batteries in a cool, dry place. To reduce the self discharge rate, room temperature should not be above 80°F (27°C) or fall below 20°F (-7°C) to prevent electrolyte from freezing.

Engine

1. While the engine is warm, remove drain plug, drain the oil from the crankcase and change oil filter. Install drain plug and refill with fresh oil. Torque drain plug to 22 ft. lb. (30 Nm).
2. Clean exterior of engine. Paint exposed metal or apply a light coat of rust preventative oil.
3. Add a fuel conditioner or biocide to prevent gelling or bacterial growth in fuel. See your local fuel supplier.

Cutting Units

1. Wash the cutting units thoroughly, then repair and paint any damaged or exposed metal.
2. Lubricate all fittings and friction points.
3. Apply a light coat of rust preventative oil to the sharpened edges of the blades.

After Storage

1. Check and reinstall battery
2. Check or service fuel filter and air cleaner.
3. Check the radiator coolant level.
4. Check oil level in the engine crankcase and hydraulic system.
5. Fill the fuel tank with fresh fuel. Bleed the fuel system.
6. Make certain that the tires are properly inflated.
7. Remove all oil from the deck blades. Readjust cutting height.
8. Start and operate the engine at 1/2 throttle. Allow enough time for the engine to become properly warmed and lubricated.

⚠ WARNING

Never operate the engine without proper ventilation; exhaust fumes can be fatal when inhaled.

4.23 MAINTENANCE CHART

WARNING

Before you clean, adjust, or repair this equipment, disengage all drives, lower implements to the ground, engage parking brake, stop engine and remove key from ignition switch to prevent injuries.

For smooth operation of pivot points and other friction points, apply several drops of SAE 30 oil every 50 hours or as required.

Remove wheels and repack bearings once a year.

Recommended Service and Lubrication Intervals

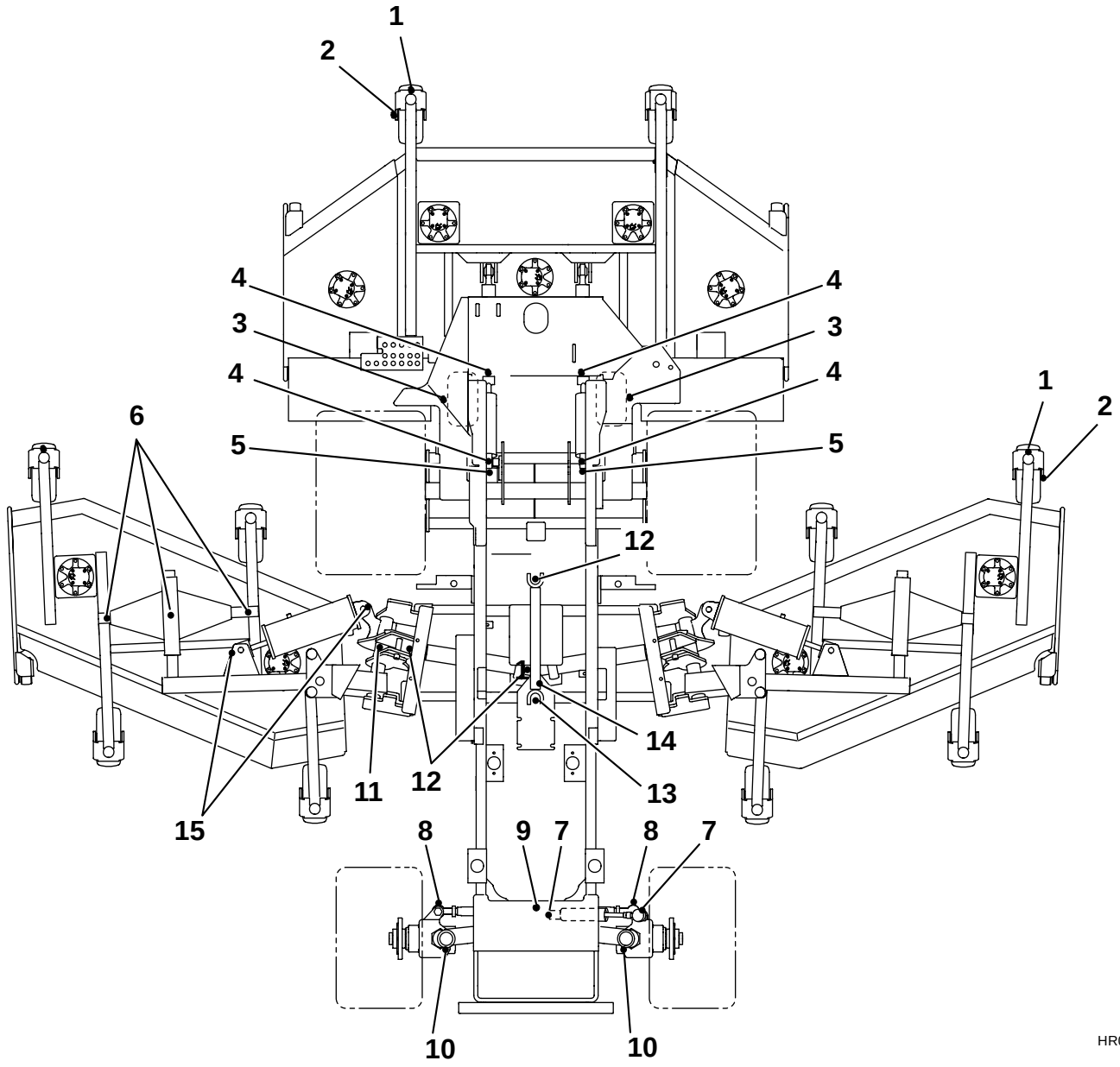
	Daily Before Starting	Every 25 Hours	Every 50 Hours	Every 100 Hours	Every 250 Hours	Every Year	See Section	Lubricant Type
Air Cleaner Indicator	I						4.7	
Air Cleaner Element	R-AR					R	4.7	
Battery				I-C		I-C	4.10	
Caster Wheel Bearings		A*		L		I-A	4.20	I
Engine Fan Belt		I*		I-A			**	
Engine Oil	I-A	R*			R		4.5	III
Engine Oil Filter		R*			R		4.5	
Fuel Filter						R	4.9	
Drain Water from Fuel Filter				C			**	
Grease Fittings - F1			L				4.24	II
Grease Fittings - F2				L			4.24	II
Hydraulic Fluid	I-A					R	4.14	IV
Hydraulic Fluid FIlters	R-AR					R	4.15	
Oil Cooler	I-C***						4.16	
Radiator Screen	I-C						4.16	
Radiator Coolant	I-A					R	4.16	
Tires	I****					I-A	4.19	

A - Add or Adjust C - Clean I - Inspect L- Lubricate R - Replace AR - As Required

* Indicates initial service for new machines.
** See Engine Manual
***Clean as Required
**** Check lug bolt torque daily for first 100 hours of operation.

I Pack bearings with NLGI Grade 2 (Service Class GB)
II Manual grease gun with NLGI Grade 2 (Service Class LB).
III Engine Oil - See Section 4.5
IV Jacobsen Hydraulic Oil - VG ISO 68

4.24 LUBRICATION CHART



Grease Fitting Locations

F1 - 50 Hours (Every Week)		Qty
1	Caster Spindles	(10)
2	Caster Wheel Axles	(10)
3	Gauge Wheel Axles	(2)
4	Lift Cylinder - Front Deck	(4)
5	Lift Arm - Front Deck	(2)
6	Side Deck Pivots	(6)
7	Steering Cylinder	(2)
8	Tie Rod	(2)
9	Axle Pivot	(1)
10	Wheel Pivot	(2)
11	Lift Arm - Side Deck	(2)
12	Lift Cylinder - Side Deck	(4)

F2 - 150 Hours		Qty
13	Drive Shaft U-Joint	(2)
14	Drive Shaft Slip Joint	(1)
15	Return Canister Pivot	(6)

5 TROUBLESHOOTING

5.1 GENERAL

The troubleshooting chart below lists basic problems that may occur during start-up and operation. For more detailed information regarding the hydraulic and electrical systems contact your area Jacobsen Dealer.

Symptoms	Possible Causes	Action
Engine will not start.	1. Parking brake disengaged or power take-off switch on.	1. Check operator back-up system and start-up procedure.
	2. Glow plug has not timed out.	2. Reset ignition switch and allow glow plug to time out before cranking engine.
	3. Battery low on charge or defective.	3. Inspect condition of battery and battery connections.
	4. Fuel tank empty or dirty.	4. Fill with fresh fuel. Change fuel filter. Bleed fuel lines.
	5. Fuse blown.	5. Replace fuse.
	6. Relay(s) defective	6. Test and replace relay.
	7. Traction pedal not in neutral.	7. Check position of pedal. Adjust Linkage.
	8. Neutral switch on drive pump not working.	8. Test, adjust or replace switch.
	9. Forward sensing switch on drive pump not working.	9. Test, adjust or replace switch.
Engine hard to start or runs poorly.	1. Fuel level low, fuel or fuel filter dirty.	1. Fill with fresh fuel. Change fuel filter. Bleed fuel lines.
	2. Air cleaner dirty.	2. Inspect and replace air filter.
	3. Injectors, fuel pump	3. Consult engine manual.
	4. Engine problem.	4. Consult engine manual
Engine stops.	1. Fuel tank empty.	1. Fill with fresh fuel and bleed fuel lines.
	2. Interlocks not set before leaving operator's seat.	2. Engage parking brake and set power take-off switch to OFF.
Engine overheating	1. Coolant level low.	1. Inspect and add coolant.
	2. Air intake restricted.	2. Clean air intake at radiator.
	3. Water pump belt broken or loose.	3. Tighten or replace belt. See engine manual.
Battery not holding charge.	1. Loose or corroded battery terminals.	1. Inspect and clean terminals
Battery light on.	2. Low electrolyte.	2. Refill to correct level.
	3. Alternator belt loose or broken	3. Tighten or replace belt. See engine manual.
	4. Charging system defective.	4. See engine manual
Cutting units not cutting evenly	1. Cutting heights not set evenly.	1. Check that decks are level. Check and adjust cutting height.
	2. Engine speed too low.	2. Check engine speed with throttle in its fast position.
	3. Mow speed not adjusted for turf conditions.	3. Adjust mow speed for best cut.
	4. Air pressure in caster tires not adjusted correctly.	4. Check tires and adjust to correct pressure.

Para Fazer Pedido de Peças

1. Preencha seu nome e endereço **completos** no pedido.
2. Explique onde e como fazer a remessa.
3. Indique o número do produto, o nome e o número de série que se encontram gravados na chapa de características ou na chapa de série do seu produto.
4. Encomende a quantidade desejada da peça sobressalente, referindo o código da cor e a descrição da peça como se indica na lista de peças.
5. Envie ou leve o pedido até um revendedor autorizado Jacobsen.
6. Inspecione todos os itens da remessa ao recebê-los. Se houver alguma peça avariada ou ausente, encaminhe uma reclamação por escrito ao transportador antes de aceitá-los.
7. Não devolva materiais sem uma carta de explicação, listando as peças que estão sendo devolvidas. As despesas de transporte devem ser pré-pagas.

O uso de peças que não sejam autorizadas invalidará a garantia.

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5 REPARAÇÃO DE AVARIAS
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Este manual é projetado para a manutenção e o ajuste deste equipamento.
Use as as instruções do manutenção e do ajuste incluídas neste manual e as instruções de utilização incluídas no **Manual de segurança e de utilização** para prestar serviços de manutenção à máquina.

O **Manual de segurança e de utilização** deve estar no malote na parte traseira do assento para a referência pelo operador.

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IMPRESO NOS E.U.A. 12-2004

Sugestão para stock de peças

Para manter o seu equipamento inteiramente operacional e a dar bom rendimento, mantenha um stock com os materiais de manutenção mais vulgarmente usados. Incluímos números de peças para materiais adicionais de apoio e ajudas para treino.

Peças de assistência técnica

Qt.	Nº peça	Descrição	Qt.	Nº peça	Descrição
	4137894	Filtro do óleo do motor			
	5003370	Filtro de ar do motor			
	557619	Filtroo de combustível do motor			
	5003691	Filtro de carga hidráulico			
	5002693	Filtro de retorno hidráulico			

Material de apoio de Serviço

Qt.	Nº peça	Descrição
	4136606	Manual de Segurança e de Funcionamento
	4136607	Manual de Peças e de Manutenção
	4136876	Catálogo de Peças do Motor

Qt.	Descrição
	Manual de Serviço

Como usar este manual

Abreviaturas

S/A - Sem assistência separada; só pode ser comprada encomendando o componente principal ou kit.
AR - É preciso indicar quantidade variável ou dimensão para se obter o ajustamento correcto.
Símbolos tais como ●, a seguir ao número do artigo indicam que existe uma nota com informações adicionais que são importantes para encomendar a peça.

Artigos indicados

Artigos indicados em início de parágrafo com avanço referem-se a componentes que estão incluídos como parte de um conjunto ou de outro componente. Estas peças podem ser encomendadas separadamente ou como parte do componente principal.

Item	Nº da peça	Qt.	Descrição	Números de série/Notas
▲ 1	123456	1	Montagem, Válvula	*Indica uma peça simples*
2	789012	1	Válvula, Elevação	*Inclui itens 3 e 4*
3	345678	1	• Manípulo	*Peça reparada incluída com o Item 2*
4	N/S	1	• Kit de vedação	*Peça não reparada incluída com o Item 2*
5	901234	1	Parafuso, 1/4-20 x 2" Cabeça Sextavada	*Indica uma peça simples*

1 SEGURANÇA

1.1 SEGURANÇA NO FUNCIONAMENTO

⚠ AVISO

ESTE VEÍCULO PODE SER PERIGOSO SE FOR COMANDADO INCORRECTAMENTE OU POR PESSOAL NÃO TREINADO.

Familiarize-se com a localização e a utilização adequada de todos os comandos. Operadores sem experiência devem receber instrução de alguém conhecedor do veículo antes de começar a trabalhar com o veículo.

1. A segurança depende da atenção, do cuidado e da prudência de quem trabalhar com o veículo ou lhe prestar assistência. Menores não devem ser autorizados a comandar o veículo.
2. É da responsabilidade do utilizador ler este manual e todas as publicações associadas a este veículo (Manual de Segurança e de Funcionamento, Manual do Motor, acessórios e equipamentos). Se o operador não souber Inglês, o proprietário é responsável pela explicação do conteúdo deste manual.
3. Aprenda a trabalhar correctamente com o veículo, a localização e finalidade de todos os comandos e indicadores antes de trabalhar com o veículo. O trabalho com veículos desconhecidos pode provocar acidentes.
4. Nunca deixe ninguém trabalhar ou prestar assistência à máquina ou aos seus equipamentos sem formação nem instruções adequadas, ou sob a influência de álcool ou estupefacientes.
5. Use sempre o vestuário e os dispositivos de protecção pessoal necessários à protecção da cabeça, dos olhos, dos ouvidos, das mãos e dos pés. Trabalhe com o veículo só durante o dia ou com boa luz artificial.
6. Inspeccione o terreno para determinar que acessórios e equipamentos são necessários para trabalhar correctamente e com segurança. Use apenas acessórios e equipamentos aprovados por Jacobsen.
7. Tenha atenção a buracos no terreno e a outras irregularidades ocultas.
8. Inspeccione a área onde o veículo vai ser usado. Apanhe pedras e outros objectos que encontrar antes de começar a trabalhar. Tenha atenção a obstáculos aéreos (ramos de árvores, fios eléctricos, etc.) e também a obstáculos subterrâneos (aspersores, tubos, raízes, etc.). Entre com cuidado numa área nova e esteja atento a riscos ocultos.
9. Nunca descarregue material para onde houver pessoas, nem deixe que haja pessoas perto do veículo em funcionamento. O proprietário/operador deve evitar ferimentos e danos materiais, pelos quais é responsável.
10. Não transporte passageiros e mantenha pessoas e animais a distância segura.
11. Nunca trabalhe com veículos que não estejam em perfeitas condições ou sem sinalética, resguardos, chapas, deflectores ou outros dispositivos de protecção seguramente montados no lugar.
12. Nunca desligue interruptores nem faça pontes.
13. Não altere a afinação do regulador do motor nem acelere excessivamente.
14. O monóxido de carbono dos gases de escape pode ser fatal se inalado. Nunca tenha o motor ligado sem ventilação correcta ou num recinto fechado.
15. O combustível é altamente inflamável; manuseie-o com cuidado.
16. Mantenha o motor limpo. Deixe o motor arrefecer antes de guardar o veículo e retire sempre a chave da ignição.
17. Desengate todos os accionamentos e puxe o travão de estacionamento antes de ligar o motor. Ligue o motor só depois de estar sentado e nunca de pé, ao lado do veículo.
18. O veículo tem de estar em conformidade com as mais recentes determinações legais ao ser conduzido ou transportado na via pública. Atenção ao trânsito ao atravessar estradas ou ao trabalhar em estradas ou ruas ou na sua proximidade.
19. Leis locais podem limitar a idade do operador.
20. Nunca use as mãos para localizar fugas de óleo. Fluido hidráulico sob pressão pode penetrar na pele e provocar ferimentos graves.
21. Em taludes, trabalhe para cima e para baixo (transversalmente) e nunca ao longo do talude (longitudinalmente).
22. Para evitar capotagem ou perda de controlo, não arranque nem pare subitamente em taludes. Reduza a velocidade ao fazer curvar apertadas. Seja cauteloso ao mudar de direcção.
23. Use sempre o cinto de segurança ao conduzir tractores equipados com ROPS.

    Nunca use cinto de segurança ao conduzir tractores sem ROPS.
24. Mantenha as pernas, os braços e o corpo dentro do compartimento do assento durante a deslocação do veículo.

Esta máquina tem de ser conduzida e assistida como se indica neste manual e destina-se à manutenção de relvados especializados por profissionais. Não é própria para terrenos grosseiros nem para erva alta.

1.2 IMPORTANTES INSTRUÇÕES DE SEGURANÇA

Esta chamada de atenção de segurança é usado para assinalar perigos potenciais.

PERIGO - Indica uma situação de perigo iminente que, se não for evitada, **PROVOCARÁ** a morte ou ferimentos graves.

AVISO - Indica uma situação potencialmente perigosa que, se não for evitada, **PODE** provocar a morte ou ferimentos graves.

CUIDADO - Indica uma situação potencialmente perigosa que, se não for evitada, **PODE** provocar ferimentos ligeiros a médios e danos materiais. Este símbolo também pode ser usado para avisar contra práticas perigosas.

Para maior clareza das gravuras, algumas ilustrações neste manual podem mostrar chapas, resguardos ou placas abertas ou removidas. No entanto, em nenhumas circunstâncias poderá este equipamento ser conduzido sem esses dispositivos firmemente instalados nos seus lugares.

AVISO

O sistema contactor impede que o tractor arranque se o pedal dos travões não estiver activo, se o interruptor do cortador de relva não estiver desligado e se o pedal de tracção não estiver na posição neutra. O sistema fará parar a máquina se o condutor abandonar o seu assento sem accionar o travão de estacionamento ou sem desligar o interruptor do cortador de relva.

NUNCA conduza o tractor se o sistema contactor não estiver a funcionar.

AVISO

1. Se, por qualquer razão, tiver de sair do posto de condução:
   a. Coloque o pedal de tracção na posição neutra.
   b. Desengate todos os accionamentos.
   c. Baixe todos os equipamentos para o chão.
   d. Engate o travão de estacionamento.
   e. Desligue o motor e retire a chave da ignição.
2. Mantenha as mãos, os pés e o vestuário longe de peças em movimento.Espere que todos os movimentos parem antes de limpar, afinar ou dar a assistência à máquina.
3. Mantenha a área de trabalho livre de pessoas e animais.
4. Nunca transporte passageiros se não houver banco apropriado.
5. Nunca trabalhe com equipamento de cortar a relva sem que o deflector de descarga esteja firmemente instalado no seu lugar.

Se seguir todas as instruções deste manual, prolongará a vida da sua máquina e manterá o seu rendimento máximo. Operações de afinação e de manutenção só devem ser executadas por um técnico qualificado.

Se precisar de informação ou assistência adicional, deverá entrar em contacto com o seu vendedor autorizado de Jacobsen, que está informado sobre os métodos de assistência mais recentes a este equipamento e pode prestar assistência rápida e eficaz**. A utilização de peças e acessórios que não sejam originais ou autorizadas por Jacobsen fazem anular a garantia.**

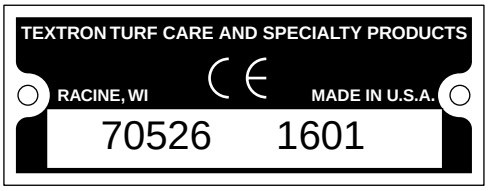
2 ESPECIFICAÇÕES

2.1 IDENTIFICAÇÃO DO PRODUTO

70528 ..... HR 9016 Turbo, 4 rodas motrizes
70529 ..... HR 9016 Turbo, 4 rodas motrizes com ROPS
70530 ..... HR 9016 Turbo, 4 rodas motrizes CE

Número de série: ..... Uma chapa de identificação como a que se indica, contendo o número de série, está fixa ao quadro do tractor ao lado direito do condutor, por cima do eixo traseiro.

Por favor, indique sempre o número de série da unidade ao encomendar peças ou quando pedir informações sobre assistência.



Produto*	Nível sonoro CEE	Pressão sonora ao nível dos ouvidos do condutor	Vibração M/S^2	
			Braços	Corpo
70530	105 dba	90 dba	,755	,026

* Com o motor a 2.400 rpm (sem carga)

2.2 MOTOR

Marca ..... Kubota
Modelo V3300 DI-T-E2B
Potência ..... 67 kW @ 2600 rpm

Nota: *A potência real poderá ser superior à indicada nas características técnicas devido às limitações de funcionamento e a factores ambientais.*

CC ..... 3,32 litros
Binário ..... 285 Nm @ 1600 rpm
Combustível:
- Modelo ..... No. 2 Diesel (CUNA NC 630.01)
- Índice ..... Índice minimo de cetano 45
- Capacidade ..... 151 litros

Afinação do regulador:
- Limitador aceleração ligado ..... 2450 rpm (PTO desligada)
  2300 rpm (PTO ligada)
- Limitador aceleração delsigado ..... 2750 rpm (Não EU)
- “Mínimo” baixo ..... 950 rpm

Lubrificação:
- Capacidade ..... 14 qts.
- Tipo de óleo ..... SAE 15 W40
- Classificação API ..... CF 4, CD-II, CE

Filtro de ar ..... Do tipo seco com válvula de evacuador e indicador de serviço.

2.3 TRACTOR

Pneus:
- À frente ..... 29 x 14 - 15: (12 telas)
- Atrás ..... 24 x 12 - 12: (6 telas)
- Pressão ..... 138 a 152 kPa

Bateria:
- Tipo ..... Una bateria de 12 Volt sem manutenção
  600 CCA @ -18°C
- Grupo 75DT

Travões:
- Funcionamento ..... Travagem dinâmica por circuito de tracção
- Estacionamento ..... Tambor mecânico nas rodas da frent. Alavanca manual activa
- Viragem assistida ..... Tambor mecânico nas rodas da frente. Comando por dois pedais

Velocidade:
- Cortar ..... 0 - 13,6 km/h
- Transporte - 2 WD .... 0 - 29 km/h
- Marcha-atrás - 2 WD 0 - 8,9 km/h
- Marcha-atrás - 4 WD 0 - 4,8 km/h

Production ..... 16,5 acres/h a 14 km/h

Sistema hidráulico:
Capacidade ..... 208 litros
Reservatório ..... 125 litros
Tipo de fluido ..... ISO VG 68
Arrefecimento ..... Radiador do óleo hidráulico
Filtro de carga..... 10 micra
Filtro da linha de retorno. 10 micra
Direcção ..... Hidrostática, assistida

2.4 PESOS E DIMENSÕES

Dimensões:	**mm**
Comprimento - Conjunto de corte descido	4420
Altura ao topo do volante	1524
Altura ao topo do ROPS	2388
Largura para cortar	5029
Largura para transporte	2413

Pesos:	**kg**
Peso total (sem condutor)	2880

2.5 UNIDADES DE CORTE

Largura
- Conjunto de corte anterior ..... 2336 mm
- Conjuntos de corte laterais ..... 1499 mm

Número de lâminas
- Conjunto de corte anterior 5
- Conjuntos de corte laterais 3

Largura total de corte ..... 2,4 m
Altura de corte ..... 25 - 140 mm
Dimensões das lâminas .. 533 mm
Velocidade das lâminas .. 5029 m/min
Pneus
- Dimensões ..... Dez 11 x 4,00 - 5,0 (4 telas)
  Dois 13 x 6,50 - 6,0 (4 telas)
- Pressão ..... 138-173 kPa

2.6 ACESSÓRIOS E DOCUMENTAÇÃO DE APOIO

Consulte o seu distribuidor Jacobsen para uma lista completa da literatura.

⚠ CUIDADO

O emprego de sobressalentes e acessórios não autorizados por Jacobsen poderá causar ferimentos pessoais ou danificar o equipamento e anulará a garantia.

Soprador JAC5098
Tinta laranja para retoques
(aspersor em lata de 350 ml) 554598
ROPS de 2 lugares com cinto de segurança 78138
I Cabine com ROPS e cinto de segurança ..... (Ver abaixo)
I kit de ar condicionado ..... (Ver abaixo)
kit de empalhamento de folhas 71055
Kit de elevação extra das lâminas 4116825
kit de arnês ligeiro 5003564
kit de luzes de estrada (Exige 5003564) 78154
kit de luzes de trabalho (Exige 5003564) 78155
Capota 67857
kit de rodas traseiras direccionáveis 2812307
Kit de pneus sem manutenção 2811453
Trinco de capot 1004049
kit de arranque a frio/temporizador
de pré-aquecimento 4137294
Programador de velocidade 67888
Limpa-neve em U ..... (Ver abaixo)
Escova rotativa em S ..... (Ver abaixo)

Documentação de apoio

Manual de Segurança e de Funcionamento 3010791
Manual de Peças e Manutenção 2810223
Vídeo do Operador e de Treino 5003465
Manual de Assistência e Reparações

● Contactar: Jodale Perry Corporation
Box 990, 300 Route 100
Morden, Manitoba, Canada R6M 1A8
Tel: (204) 822-9100
Fax: (204) 822-9111

◆ Contactar: Loftness Specialized Equipment, Inc.
South Highway 4
Hector, MN 55342
Tel: 800-828-7624
Fax: (320) 848-6269
ATTN Doug Haley

▲ Contactar: M-B Companies, Inc.
1200 S. Park Street, Box 148
Chilton, WI 53014
Tel: (888) 558-5801
Fax: (920) 898-4588

3 AFINAÇÕES

3.1 CONSIDERAÇÕES GERAIS

⚠ AVISO

Para evitar lesões, baixe os utensílios até ao solo, desengate todos os accionadores, puxe o travão de estacionamento, desligue o motor e retire a chave da ignição antes de fazer quaisquer afinações ou de proceder à manutenção.

Certifique-se de que o tractor está estacionado numa superfície sólida e plana. Nunca realize trabalhos num tractor que esteja apoiado somente no macaco. Utilize sempre suportes de macaco.

Caso apenas a parte dianteira ou traseira do tractor esteja levantada, coloque calços à frente e atrás das rodas que não estão levantadas.

1. Afinações e trabalhos de manutenção devem ser sempre executados por técnicos qualificados. Se a afinação apropriada não puder ser realizada, entre em contacto com o distribuidor autorizado da Jacobsen.
2. Componentes gastos ou danificados devem ser substituídos e não ajustados.
3. Cabelos longos, jóias ou vestuário largo podem ser apanhados por partes em movimento.

⚠ CUIDADO

Adopte cautela para evitar que mãos e dedos fiquem presos entre os componentes móveis e fixos da máquina.

4. Não modifique as afinações do regulador nem opere o motor a velocidades excessivas.

3.2 NIVELAMENTO DOS CONJUNTOS DE CORTE

Se os conjuntos de corte ou os rodízios tiverem sido desmontados para assistência técnica ou se a altura de corte for irregular, poderá ser necessário nivelar os conjuntos de corte. **Regule os rodízios de forma a que as alturas de corte das lâminas exteriores fiquem a 3 mm umas das outras.**

1. Coloque o tractor e os conjuntos de corte numa superfície dura, plana e lisa. Coloque as lâminas paralelas ao tractor como se indica.
2. Assegure-se de que os pneus de todos os rodízios se encontram à **mesma** pressão.
3. Regule a altura de corte pretendida para o conjunto de corte usando os espaçadores de 13 mm **(E)** fornecidos juntamente. Veja a Secção 3.5.
4. Medir a altura do solo à margem dianteira **(B)** das duas lâminas exteriores para os conjuntos de corte laterais e a secção central do conjunto de corte dianteiro. Coloque as anilhas de nivelar de 3 mm **(C)** por cima ou por baixo do eixo do rodízio conforme for necessário para se obter uma altura de corte nivelada para todos os conjuntos de corte. Mantenha as anilhas de 1,5 mm **(D)** como se indica, isto é, uma por cima e outra por baixo do fuso do rodízio.

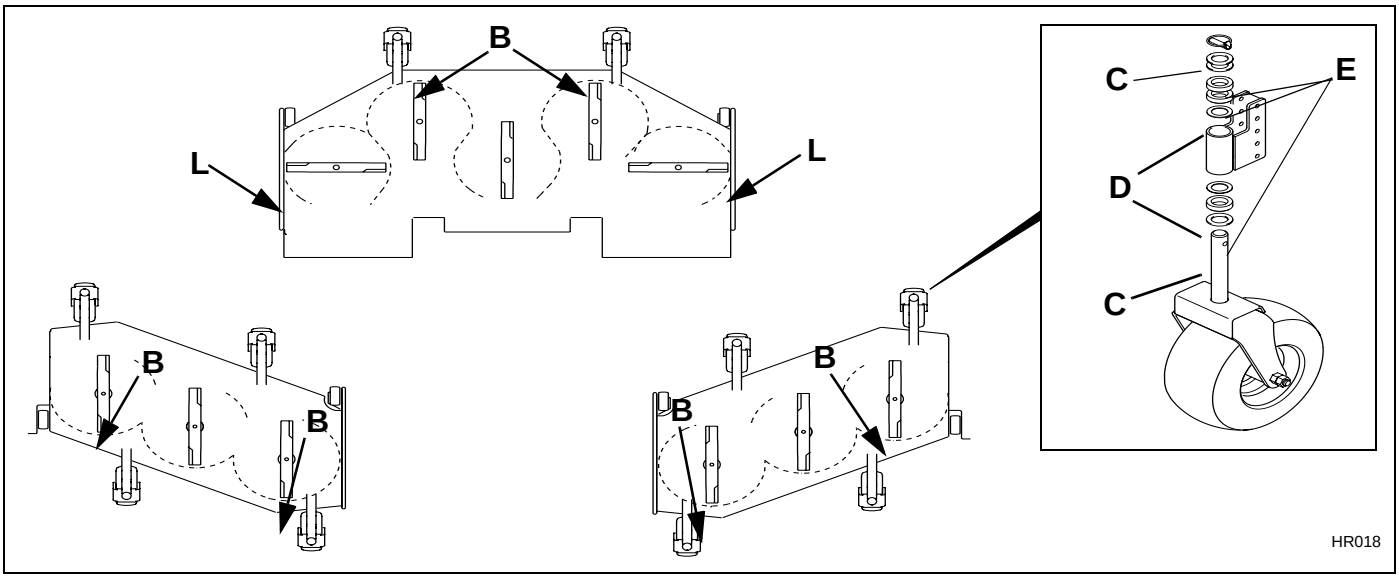


Fig. 3A

3.3 ASSISTÊNCIA TÉCNICA AO CONJUNTO DE CORTE ANTERIOR

O conjunto de corte anterior pode ser subido e inclinado para melhor acesso à unidade de corte e às lâminas para trabalhos de assistência técnica e limpeza. Assegure-se de que desengatou todos os accionamentos; accione o travão de estacionamento, desligue o motor e retire a chave de ignição antes de começar a trabalhar no conjunto de corte.

Para inclinar o conjunto de corte anterior para a posição de assistência técnica:

1. Rode o mecanismo anti-oscilante **(F),** localizado por baixo do painel do pavimento do lado esquerdo, para a posição de assistência técnica - Fig. 3C.
2. Ligue o motor e suba o conjunto de corte até que as rodas de nivelar traseiras se levantem do chão. Desligue o motor.
3. Retire as cavilhas de regulação da altura de corte do suporte da roda de nivelar para que o conjunto do braço flutue livremente.
4. Ligue o motor e suba totalmente o conjunto de corte. Desligue o motor.
5. Suba e rode a parte da frente do conjunto de corte até ficar firmemente preso.

⚠ AVISO

O conjunto de corte dianteiro é pesado e poderá causar danos graves ou permanentes se for deixado cair. Use as técnicas devidas de elevação ao elevar ou rebaixar as armações de corte para a posição de trabalho.

Ao rebaixar o conjunto, se o trinco for puxado para fora, todo o peso do conjunto será libertado. Assegure-se de que quem estiver a assistir a este procedimento está ciente disto antes do trinco ser puxado.

Para rebaixar o conjunto de corte após a manutenção:

1. Eleve o conjunto e puxe o trinco **(A)** para fora. Manualmente, baixe e posicione o conjunto de corte até ser suportado pelos braços de elevação. Para evitar danos físicos a pessoas ou materiais ao conjunto de corte, **NÃO** deixe que o conjunto de corte caia desamparado da posição de manutenção.
2. Ligue o motor e desça o conjunto de corte até ficar nivelado e os rodízios fiquem quase a tocar o solo. Desligue o motor.
3. Introduza a cavilha de regulação para os rodízios traseiros para conjugar a altura de corte - Fig. 3F.
4. Rode o mecanismo anti-oscilante **(F)** para a posição de trabalho. Fig. 3C.

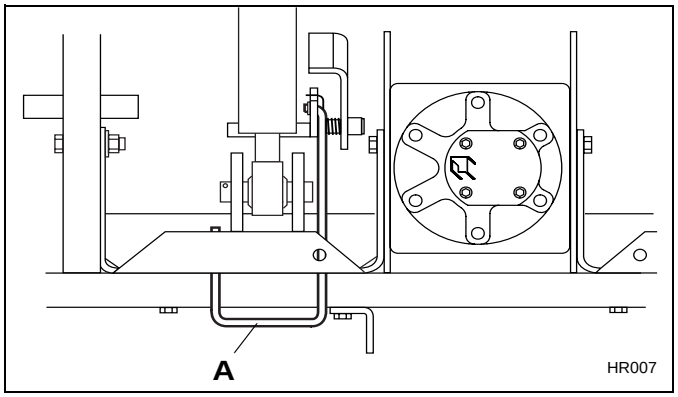


Fig. 3B

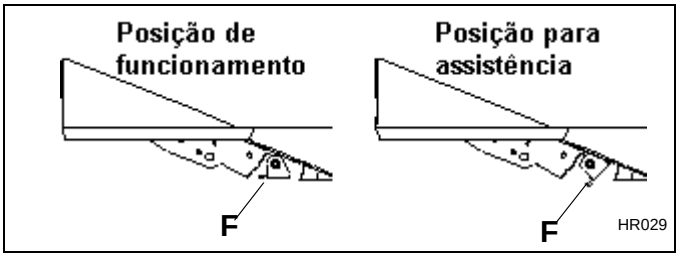


Fig. 3C

3.4 REGULAÇÃO DO CONJUNTO DE CORTE LATERAL

1. Os conjuntos de corte laterais têm de ser regulados em relação ao conjunto dianteiro para que a relva não seja rapada e os conjuntos laterais não sejam danificados.
2. Rode as lâminas do conjunto de corte dianteiro para as posições indicadas na **Figura 3A**.
3. Meça a altura entre o solo e a margem dianteira da lâmina do conjunto de corte central **(B)** e as margens exteriores das lâminas dos conjuntos de corte laterais **(L)**. Coloque ou retire calços **(G)** conforme necessário entre a peça **(H)** e o suporte dos conjuntos de corte laterais até que todas as lâminas do conjunto dianteiro fiquem à mesma altura.
4. Guarde os calços excedentes **(G)** por cima do suporte.
5. Regule os braços de suporte do conjunto de corte dianteiro **(J)** conforme necessário até que o braço fique apoiado no batente **(K)**.

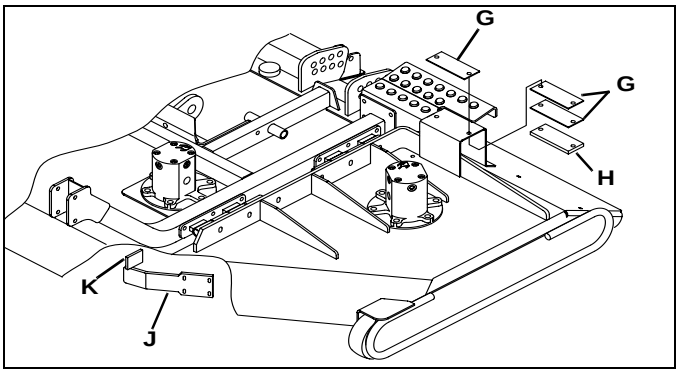


Fig. 3D

3.5 ALTURA DE CORTE

A altura de corte para os conjuntos de corte pode ser regulada entre 25 e 125 mm em incrementos de 13 mm. A altura de corte real pode variar ligeiramente em relação às alturas indicadas, em resultado das condições da relva e de outros factores.

Nota: *Ao cortar zonas com ondulações, a redução das altura de corte pode provocar o arranque da relva. Regule a altura de forma a evitar que a relva sofra danos.*

1. Estacione o tractor numa zona plana e horizontal. Suba os conjuntos de corte até que os rodízios fiquem suficientemente distanciados do chão para poderem ser retirados. Coloque calços por baixo dos conjuntos de corte para ficarem apoiados em todos os lados.

> **⚠ AVISO**
>
> A fim de evitar ferimentos graves, desça o conjunto de corte até ficar perfeitamente assente nos apoios. Isso evitará a sua descida acidental ao fazer afinações. Desengate todos os accionamentos, engate o travão de estacionamento, desligue o motor e retire a chave de ignição.

   Para retirar o rodízio interior da frente dos conjuntos de corte laterais, levante esses conjuntos até à altura máxima e fixe-os na posição de transporte.

2. A Fig. 3E mostra a chapa respeitante à regulação da altura para os rodízios.

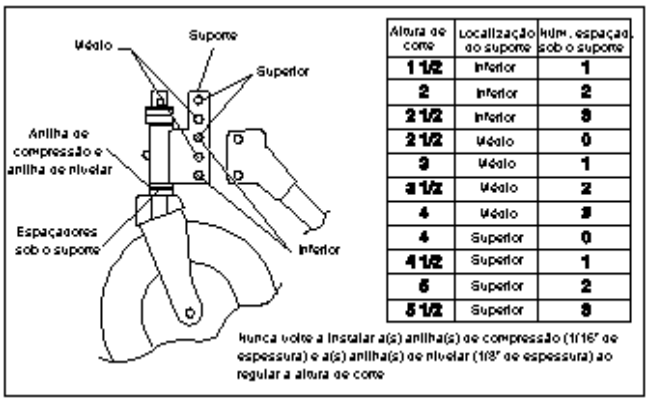
   Coluna 1 - Altura de corte
   Coluna 2 - Localização da montagem
   Coluna 3 - Colocação dos distanciadores

   Regule os distanciadores na medida indicada. Guarde distanciadores sobressalentes na parte de cima da árvore. Se necessário, volte a colocar o suporte da roda nos orifícios indicados para altura de corte.

   IMPORTANTE: *Não altere as finas anilhas axilares (1,5 mm) e as anilhas de nivelar (3 mm) no eixo. Essas anilhas devem manter-se na mesma posição e na mesma quantidade em que foram instaladas na origem. Só precisam de ser alteradas se for preciso nivelar novos rodízios ou novos conjuntos de corte - Secção 3.2.*

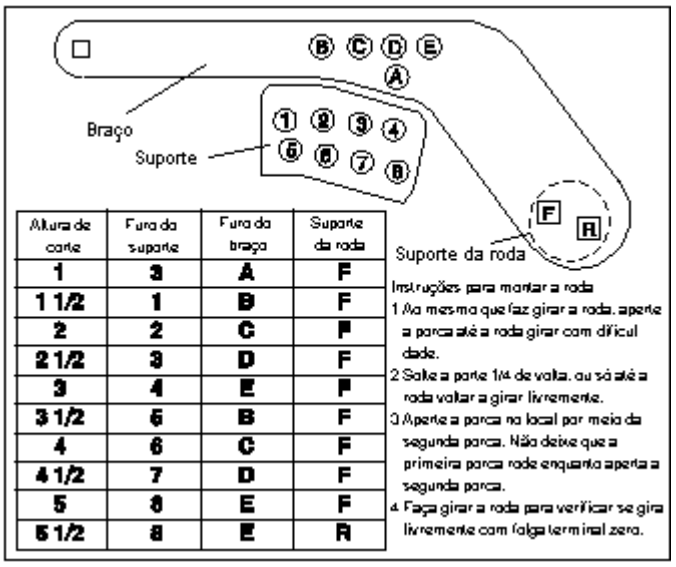
3. Para regular as rodas traseiras no conjunto de corte anterior, veja a Fig. 3F. Suba os conjuntos laterais aproximadamente 30 cm e coloque blocos de apoio por baixo. Desça o conjunto para ficar perfeitamente assente nos blocos.

4. Retire o pino do braço da roda traseira e volte a colocar o suporte para a altura de corte pretendida. Ao regular a altura de corte para 150 mm, a roda de guia tem de ser reposicionada no braço. Siga as instruções para a montagem da roda dadas na sinalética, Fig. 3F.


Médio
Suporte
Superior
Anilha de compressão e anilha de nivelar
Espaçadores sob o suporte
Inferior
Nunca volte a instalar a(s) anilha(s) de compressão (1/16" de espessura) e a(s) anilha(s) de nivelar (1/8" de espessura) ao regular a altura de corte

Altura de corte	Localização do suporte	Núm. espaçad. sob o suporte
1 1/2	Inferior	1
2	Inferior	2
2 1/2	Inferior	3
2 1/2	Médio	0
3	Médio	1
3 1/2	Médio	2
4	Médio	3
4	Superior	0
4 1/2	Superior	1
5	Superior	2
5 1/2	Superior	3

Fig. 3E



Altura de corte	Furo do suporte	Furo do braço	Suporte da roda
1	3	A	F
1 1/2	1	B	F
2	2	C	F
2 1/2	3	D	F
3	4	E	F
3 1/2	5	B	F
4	6	C	F
4 1/2	7	D	F
5	8	E	F
5 1/2	8	E	R

Instruções para montar a roda
1 Ao mesmo que faz girar a roda, aperte a porca até a roda girar com dificuldade.
2 Solte a porta 1/4 de volta, ou só até a roda voltar a girar livremente.
3 Aperte a porca no local por meio da segunda porca. Não deixe que a primeira porca rode enquanto aperta a segunda porca.
4 Faça girar a roda para verificar se gira livremente com folga terminal zero.

Regulação da roda de nivelar para o conjunto de corte dianteiro

Fig. 3F

Pressão dos pneus

Verifique a pressão nos pneus dos rodízios quando os pneus estiverem frios. Mantenha a pressão de ar entre 138-173 kPa para melhorar a precisão da altura de corte.

Nota: *É importante manter pressões iguais em todos os pneus de rodízios e de calibres, dentro da faixa especificada, para assegurar um corte preciso e uniforme.*

3.6 TRAVÃO DE ESTACIONAMENTO

O interruptor do travão faz parte do sistema de apoio ao condutor e detecta se o travão de estacionamento está engatado. Se esse interruptor falhar, a máquina pode não arrancar e o sistema de apoio ao condutor não funciona correctamente.

Para regular o interruptor:

1. Puxe o travão de estacionamento para a sua posição vertical (engatado).
2. Regule o interruptor **(C)** rodando-o no suporte **(B)**. Alinha a área de detecção no interruptor com o punho do travão **(D)**.
3. Regule a distância entre a área de detecção no interruptor e o braço do travão para 1,5 - 3 mm. Para regular a distância, use chapas **(E)** ou anilhas nº 10 **(F)**, conforme for mais conveniente, entre o interruptor e o seu suporte.
4. Se estiver montado correctamente, o interruptor fica fechado quando o travão de estacionamento está engatado e aberto quando o travão está desengatado.

Importante: Verifique sempre o sistema de apoio ao operador depois de substituir ou regular o interruptor. (Veja o Manual de Segurança e de Funcionamento).

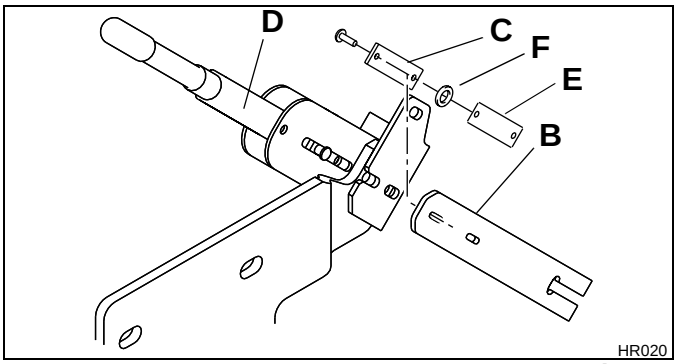


Fig. 3G

3.7 AFINAÇÃO NEUTRA

Importante: A regulação neutra na bomba de accionamento vem regulada previamente de fábrica em todos os tractores novos e em todas as bombas sobressalentes. Novas afinações só **são** precisas se a bomba tiver sido desmontada para assistência técnica ou se o suporte da alavanca de posição neutra **(F)** se tiver soltado.

Como regular a posição neutra na bomba:

1. Desengate a ligação entre o pedal de tracção e a bomba. Retire da bomba o suporte do interruptor.
2. Coloque o tractor de forma segura em cavaletes para que **todas** as rodas fiquem levantadas do chão.
3. Verifique que a válvula de reboque **(H)** está fechada.
4. Desaperte os parafusos **(G)** que fixam o braço de recuo da bomba apenas o necessário para que ele possa ser deslocado.
5. Engate o travão de estacionamento e regule o interruptor de PTO (tomada de força) para a posição neutra.

   O interruptor de detecção da posição neutra tem de estar fechado para que o tractor possa arrancar. Nesse ponto, o interruptor ainda não pode ser ligado à bomba. Para fechar o interruptor para que o motor possa arrancar, coloque-o virado para baixo no caixilho de metal.
6. Ligue o motor e observe as rodas. Rode o suporte **(F)** em furos oblongos até que as rodas deixem de rodar. Desligue o motor e aperte o suporte na posição correcta.
7. Estabeleça as uniões do pedal de tracção - Secção 3.11 - e instale e regule os interruptores - Secções 3.8 e 3.9.
8. Ligue o motor e verifique o funcionamento do pedal de tracção. As rodas não devem poder rodar quando o pedal regressa à posição neutra.

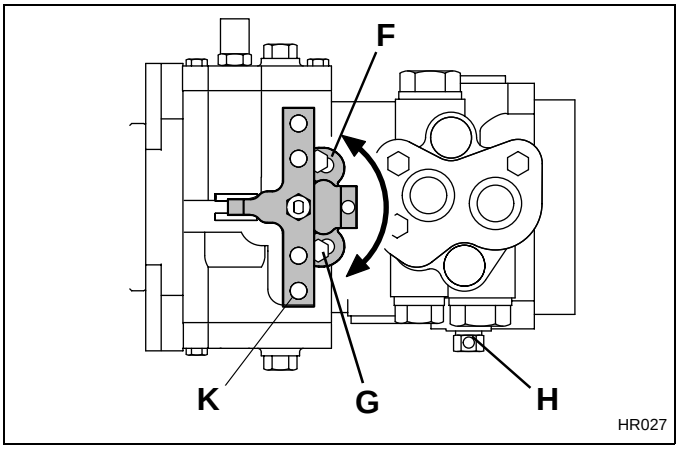


Fig. 3H

3.8 SENSOR DE POSIÇÃO NEUTRA

O sensor de posição neutra faz parte do sistema de apoio ao condutor e serve para impedir que o tractor arranque se o pedal de tracção não se encontrar na posição neutra. Se este interruptor falhar ou se estiver mal regulado, o tractor não arranca.

1. Assegure-se de que a bomba de accionamento e o pedal de tracção estão regulados para a posição neutra - Secção 3.7 e Secção 3.11.
2. Coloque o interruptor de forma a que o ponteiro **(A)** na placa do activador fique centrado sobre a área de detecção no interruptor.
3. Regule o interruptor de forma a que a folga entre a superfície de detecção no interruptor e a extremidade do ponteiro seja de 1,5 a 3 mm. Fixe o interruptor nessa posição.
4. Após a regulação, verifique o funcionamento do sistema de apoio ao condutor.

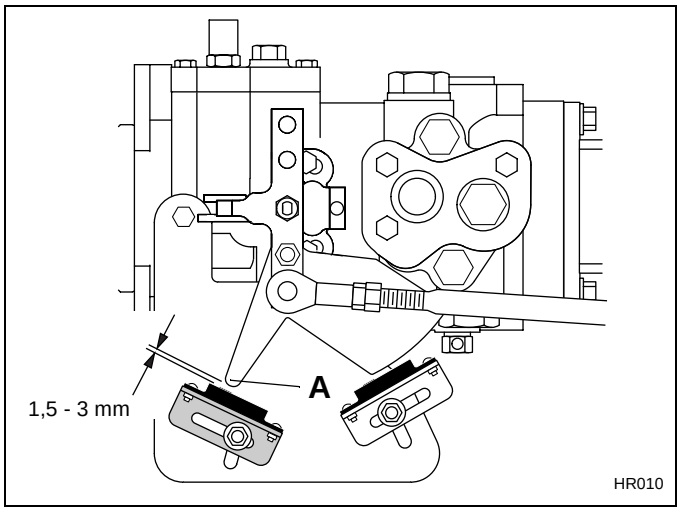


Fig. 3I

3.9 SENSOR DE AVANÇO

O sensor de avanço permite que o tractor só trabalhe com tracção às quatro rodas com o pedal de tracção na sua posição avançada. Ao trabalhar em marcha-atrás, o interruptor abre e passa o tractor para tracção a duas rodas. Se houver falha na tracção a quatro rodas, verifique a regulação e o funcionamento do sensor.

1. Assegure-se de que a bomba de accionamento, o conjunto do pedal de tracção e o sensor de posição neutra estão regulados para a posição neutra - Secções 3.7, 3.11 e 3.8.
2. Regule o interruptor para que a folga entre a superfície de detecção no interruptor e a margem da placa do activador seja de 1,5 a 3 mm.
3. Desligue o interruptor do painel de terminais e ligue um medidor de continuidade entre os terminais do interruptor **(B)**. Com o pedal de tracção na posição neutra, mova o interruptor para trás até abrir e, seguidamente, para a frente até fechar. Aperte o interruptor nessa posição.
4. Com o medidor de continuidade ainda montado, verifique a regulação carregando no pedal de tracção.

   Interruptor fechado - Pedal de tracção na posição neutra e durante todo o curso de avanço do pedal.

   Interruptor aberto - Curso total de recuo do pedal.
5. Ligue o interruptor ao painel de terminais e verifique o funcionamento da tracção às quatro rodas.

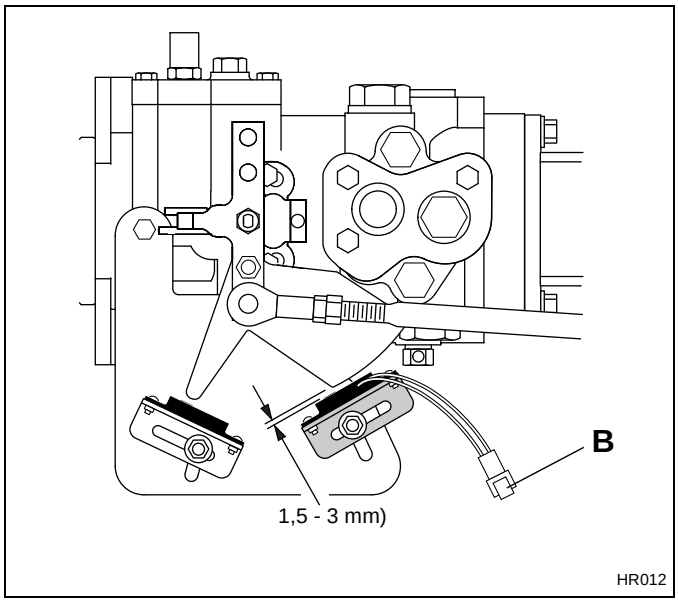


Fig. 3J

3.10 INTERRUPTORES DE LIMITAÇÃO DE SUBIDA

A rotação das lâminas de corte é comandada por interruptores de fim de curso localizados no quadro do tractor perto dos braços de subida para cada conjunto de corte. Quando um conjunto de corte é subido, o interruptor abre e automaticamente desengata as lâminas de corte. Quando um conjunto de corte é descido, o interruptor fecha e as lâminas são engatadas. Se o interruptor avariar, as lâminas de corte não engatam quando são descidas.

Regulação dos interruptores de fim de curso:

1. Estacione o tractor numa superfície horizontal.
2. Ligue o tractor e suba ou desça os conjuntos de corte até que o ponto mais alto no canto superior do conjunto atinja a altura indicada na Fig. 3K.
3. Desligue o motor e retire a chave. Apoie os conjuntos de corte sobre calços para evitar que sejam acidentalmente descidos durante operações de regulação.
4. Coloque o interruptor de forma a que área de detecção **(C)** no interruptor fique centrada sobre a margem de guia **(A)** da placa do activador no braço de subida.
5. Regule a folga entre a área do sensor no interruptor e a placa do activador no braço de subida para 1,5 a 3 mm. Para regular a folga para o braço de subida da frente, use chapas **(D)** ou anilhas chatas nº 10 **(B)** entre o interruptor e o respectivo suporte.

Verifique o funcionamento dos interruptores de fim de curso. As lâminas têm de parar de girar logo que os conjuntos de corte são subidos acima das alturas indicadas.

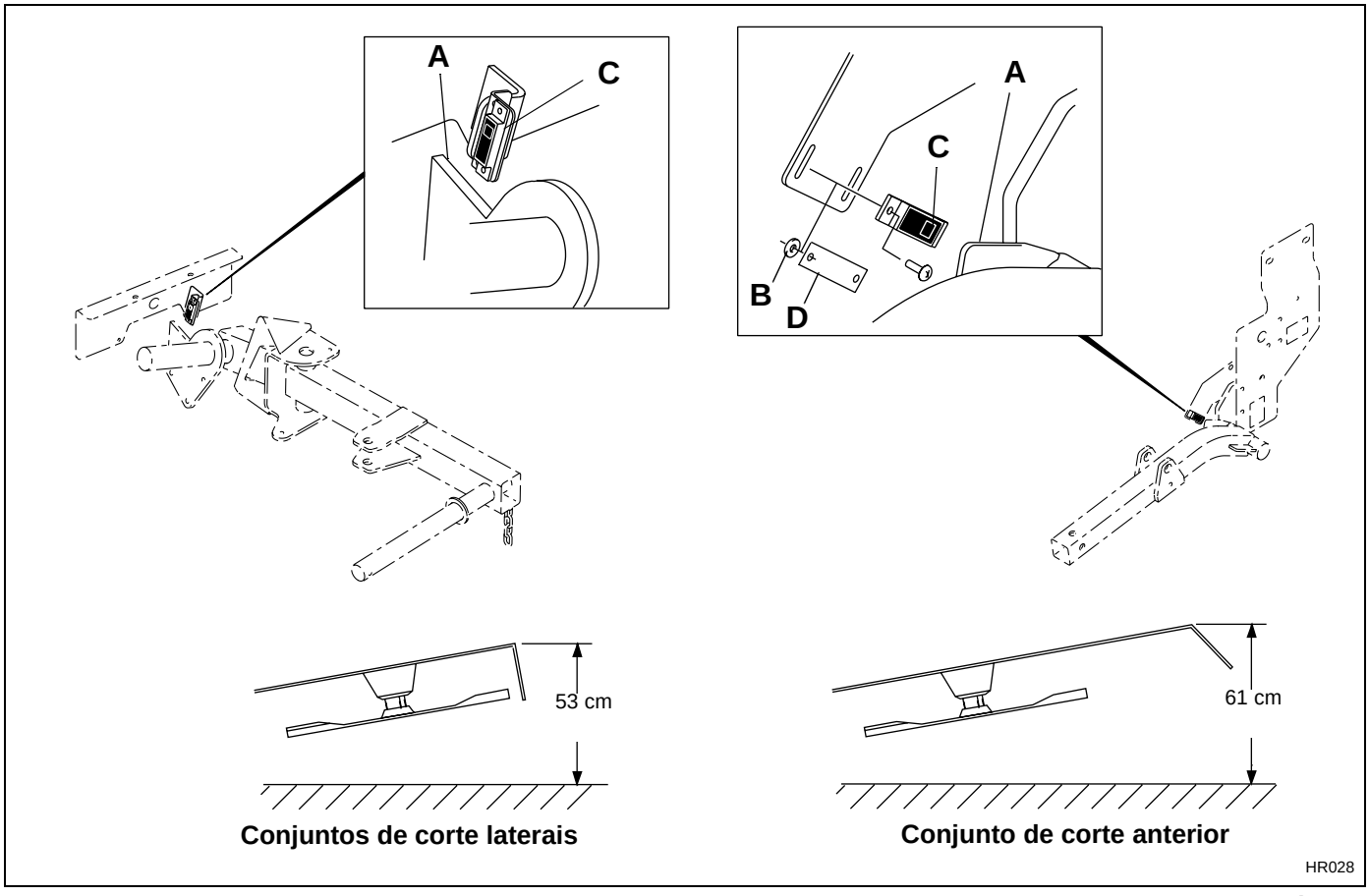


Fig. 3K

3.11 PEDAL DE TRACÇÃO

O pedal de tracção tem de ser regulado de forma a que a bomba fique no curso total quando o pedal é carregado a fundo para a frente.

1. Assegure-se de que o braço de retorno **(K - Figura 3H)** na bomba está regulado para a posição neutra - Secção 3.7.
2. Carregue no pedal de tracção para a frente **(I)** até tocar no pavimento e mantenha-o nessa posição.
3. Regule o esticador **(J)** até sentir que o braço de retorno toca no batente interno da bomba. Afaste o tirante 2 a 3 voltas dessa posição. Fica assim garantido que o pedal de tracção atinge o fundo antes do braço de retorno.

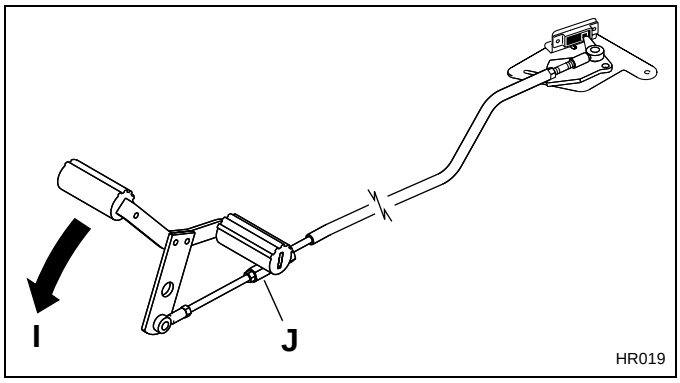


Fig. 3L

3.12 ENGATE

1. Posicione as rodas perfeitamente direccionadas para a frente.
2. Desaperte as porcas **(M)** em ambas as extremidades do eixo de engate **(N)**.
3. Rode o eixo de engate **(N)** para proporcionar um engate perfeito. O engate não deverá exceder **X** + 6,3 mm. Aperte das porcas **(M)**.

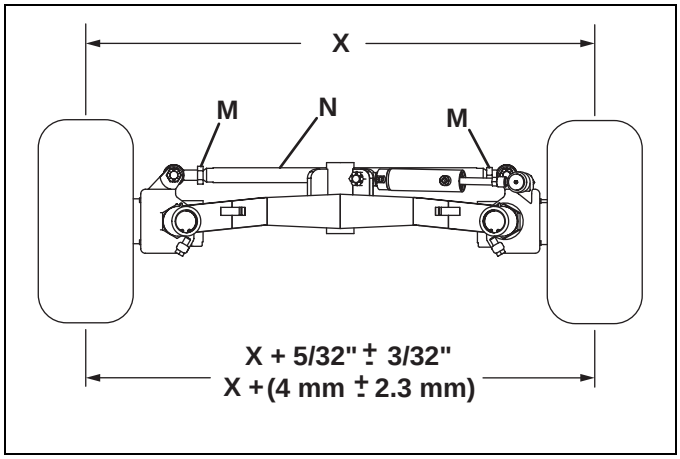


Fig. 3M

3.13 PARAFUSOS LIMITADORES DE DIRECÇÃO

1. O engate deverá ser efectuado antes de serem ajustados os parafusos limitadores de direcção. Se o engate for alterado, os limitadores de direcção deverão ser reajustados.
2. Rode os parafusos limitadores **(P e Q)** para fora o mais possível, mas sem retirá-los.
3. Rode o volante para a direita até que o pneu traseiro direito esteja a 45° com o eixo direccional. Aperte o limitador **(P)** até que o parafuso toque no eixo.
4. Rode o volante para a esquerda até que o pneu traseiro esquerdo esteja a 45° com o eixo direccional. Aperte o limitador **(Q)** até que o parafuso toque no eixo.

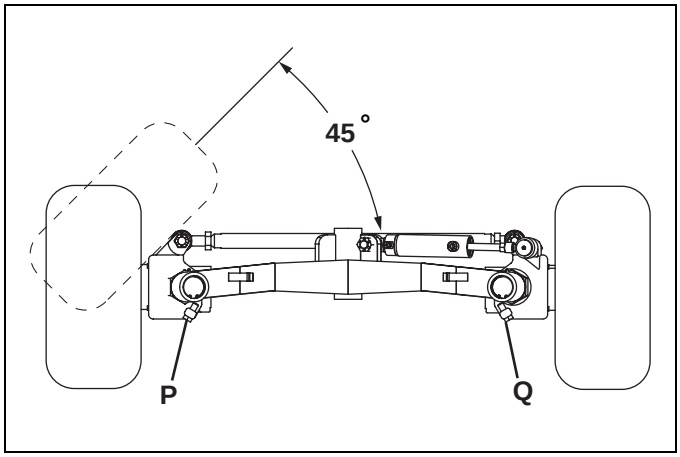


Fig. 3N

3.14 BINÁRIO

CUIDADO

Todos os valores de binário incluídos nestas tabelas são aproximados e servem apenas como referência. A aplicação destes valores de binário é por conta e risco do utilizador. A Jacobsen não se responsabiliza por quaisquer perdas, reclamações ou danos resultantes da aplicação destas tabelas. **Deve haver sempre extrema cautela ao usar qualquer valor de binário.**

Jacobsen utiliza normalmente cavilhas anodizadas do grau 5, salvo indicação em contrário. Para o aperto de cavilhas anodizadas, deve ser usado o valor indicado para as lubrificadas.

ELEMENTOS DE APERTO COM NORMALIZAÇÃO NACIONAL AMERICANA

TAM-ANHO	UNIDA-DES	GRAU 5		GRAU 8		TAM-ANHO	UNIDA-DES	GRAU 5		GRAU 8	
		Lubrifica-das	Secas	Lubrifica-das	Secas			Lubrifica-das	Secas	Lubrifica-das	Secas
#6-32	in-lb (Nm)	–	20 (2.3)	–	–	7/16-14	ft-lb (Nm)	37 (50.1)	50 (67.8)	53 (71.8)	70 (94.9)
#8-32	in-lb (Nm)	–	24 (2.7)	–	30 (3.4)	7/16-20	ft-lb (Nm)	42 (56.9)	55 (74.6)	59 (80.0)	78 (105)
#10-24	in-lb (Nm)	–	35 (4.0)	–	45 (5.1)	1/2-13	ft-lb (Nm)	57 (77.2)	75 (101)	80 (108)	107 (145)
#10-32	in-lb (Nm)	–	40 (4.5)	–	50 (5.7)	1/2-20	ft-lb (Nm)	64 (86.7)	85 (115)	90 (122)	120 (162)
#12-24	in-lb (Nm)	–	50 (5.7)	–	65 (7.3)	9/16-12	ft-lb (Nm)	82 (111)	109 (148)	115 (156)	154 (209)
1/4-20	in-lb (Nm)	75 (8.4)	100 (11.3)	107 (12.1)	143 (16.1)	9/16-18	ft-lb (Nm)	92 (124)	122 (165)	129 (174)	172 (233)
1/4-28	in-lb (Nm)	85 (9.6)	115 (13.0)	120 (13.5)	163 (18.4)	5/8-11	ft-lb (Nm)	113 (153)	151 (204)	159 (215)	211 (286)
5/16-18	in-lb (Nm)	157 (17.7)	210 (23.7)	220 (24.8)	305 (34.4)	5/8-18	ft-lb (Nm)	128 (173)	170 (230)	180 (244)	240 (325)
5/16-24	in-lb (Nm)	173 (19.5)	230 (26.0)	245 (27.6)	325 (36.7)	3/4-10	ft-lb (Nm)	200 (271)	266 (360)	282 (382)	376 (509)
3/8-16	ft-lb (Nm)	23 (31.1)	31 (42.0)	32 (43.3)	44 (59.6)	3/4-16	ft-lb (Nm)	223 (302)	298 404	315 (427)	420 (569)
3/8-24	ft-lb (Nm)	26 (35.2)	35 (47.4)	37 (50.1)	50 (67.8)	7/8-14	ft-lb (Nm)	355 (481)	473 (641)	500 (678)	668 (905)

ELEMENTOS MÉTRICOS DE APERTO

TAM-ANHO	UNIDA-DES	4.6		8.8		10.9		12.9		Elementos de aperto não críticos para alumínio
		Lubrifica-das	Secas	Lubrifica-das	Secas	Lubrifica-das	Secas	Lubrifica-das	Secas	
M4	Nm (in-lb)	–	–	–	–	–	–	3.83 (34)	5.11 (45)	2.0 (18)
M5	Nm (in-lb)	1.80 (16)	2.40 (21)	4.63 (41)	6.18 (54)	6.63 (59)	8.84 (78)	7.75 (68)	10.3 (910	4.0 (35)
M6	Nm (in-lb)	3.05 (27)	4.07 (36)	7.87 (69)	10.5 (93)	11.3 (102)	15.0 (133)	13.2 (117)	17.6 (156)	6.8 (60)
M8	Nm (in-lb)	7.41 (65)	9.98 (88)	19.1 (69)	25.5 (226)	27.3 (241)	36.5 (323)	32.0 (283)	42.6 (377)	17.0 (150)
M10	Nm (ft-lb)	14.7 (11)	19.6 (14)	37.8 (29)	50.5 (37)	54.1 (40)	72.2 (53)	63.3 (46)	84.4 (62)	33.9 (25)
M12	Nm (ft-lb)	25.6 (19)	34.1 (25)	66.0 (48)	88.0 (65)	94.5 (70)	125 (92)	110 (81)	147 (108)	61.0 (45)
M14	Nm (ft-lb)	40.8 (30)	54.3 (40)	105 (77)	140 (103)	150 (110)	200 (147)	175 (129)	234 (172)	94.9 (70)

4 MANUTENÇÃO

4.1 CONSIDERAÇÕES GERAIS

⚠ AVISO

Antes de proceder a limpeza, afinações ou reparações neste equipamento, desengate todos os accionadores, baixe os utensílios até ao solo, engate o travão de estacionamento, desligue o motor e retire a chave da ignição para evitar lesões.

Certifique-se de que o tractor está estacionado numa superfície sólida e plana. Nunca trabalhe num tractor que esteja apoiado somente no macaco. Utilize sempre os suportes do macaco.

1. Afinações e trabalhos de manutenção devem ser sempre executados por técnicos qualificados. Se a afinação apropriado não puder ser realizado, entre em contacto com o distribuidor autorizado da Jacobsen.
2. Inspeccione o equipamento a intervalos regulares, estabeleça um programa de manutenção e mantenha registos detalhados.
   a. Mantenha o equipamento limpo.
   b. Mantenha todos os componentes móveis correctamente afinados e lubrificados.
   c. Substitua peças gastas ou danificadas antes de começar a trabalhar com a máquina.
   d. Mantenha todos os fluidos nos níveis correctos.
   e. Mantenha todos os painéis no seu lugar e todos os equipamentos bem presos.
   f. Mantenha os pneus com a pressão de ar correcta.
3. Não use adornos nem vestuário solto ao fazer afinações ou reparações.
4. Use as gravuras no Catálogo de Peças como referência para desmontar e montar componentes.
5. Proceda à reciclagem ou deite fora todos os materiais de risco (baterias, combustíveis, lubrificantes, anti-congelante, etc.) de acordo com as regulamentações locais, regionais ou nacionais.

4.2 INSPECÇÃO DAS LÂMINAS

1. De 50 em 50 horas de trabalho, ou sempre que o cortador de relva seja retirado do tractor, inspeccione cuidadosamente as lâminas a fim de se assegurar de que se encontram em boas condições de trabalho. Lâminas empenadas **(G)**, com sulcos **(H)** ou fendas **(J)** têm de ser substituídas.

⚠ CUIDADO

Faça a inspecção das lâminas com muito cuidado para evitar ferir as mãos e os dedos entre as extremidades das lâminas.

⚠ AVISO

Nunca tente endireitar, soldar ou reparar uma lâmina danificada. Substitua sempre uma lâmina danificada.

2. Qualquer uma das condições acima descritas pode fazer com que uma parte da lâmina parta e seja atirada pelo cortador, causando ferimentos graves em pessoas próximas ou danos materiais.
3. Uma lâmina empenada pode ter uma fissura microscópica **(G)** que pode aumentar e provocar a fractura da lâmina. Lâminas empenadas também provocam vibrações e outros esforços na máquina.
4. Pó e areia podem provocar um sulco perigoso na lâmina **(H)** entre as palhetas de ventilação e a parte plana da lâmina que aumenta rapidamente e produz uma fenda **(J)** que, por sua vez, pode fazer soltar um pedaço da lâmina.

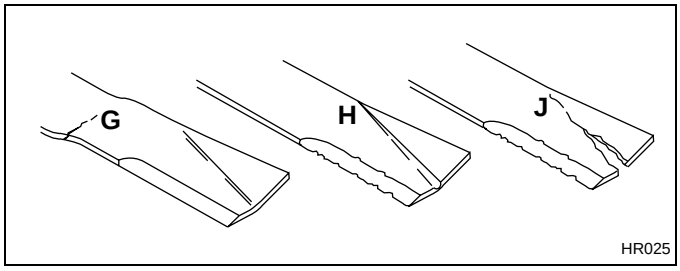


Fig. 4A

4.3 AFIAMENTO DAS LÂMINAS

1. Coloque um calço de madeira entre a lâmina e a blindagem do corta-relva para impedir que a lâmina gire. Para retirar a lâmina, desaperte o parafuso de fixação no sentido contrário ao do movimento dos ponteiros do relógio**.**

⚠ AVISO

As lâminas do corta-relva podem ficar com gumes muito afiados. Tenha sempre muito cuidado nos trabalhos de assistência e ao manusear as lâminas.

2. Ao rectificar ou afiar a lâmina, não siga o sentido original de afiamento indicado em **(A).** Afie novos gumes de corte no ângulo indicado em **(B).**

   Se a perda total máxima da lâmina atingir 13 mm, não afie mais; substitua a lâmina.

⚠ AVISO

O afiamento da lâmina para além dos 13 mm permitidos pode provocar o desprendimento da ponta da lâmina e a sua projecção a elevada velocidade, o que pode causar ferimentos graves a pessoas próximas e/ou danos materiais.

3. Tenha o cuidado de verificar que é retirada a mesma quantidade de material em ambos os lados da lâmina a fim de evitar que a mesma fique desequilibrada. Uma lâmina nessas condições provoca vibrações excessivas e pode danificar o corta-relva.
4. Use um dispositivo para equilibrar a lâmina para a verificar depois de ser afiada.
5. Instale a lâmina no corta-relva. Instale as lâminas de forma a que os gumes de corte **(C)** fiquem viradas para o sentido de rotação como se indica na Fig. 4C. O gume de corte biselado da lâmina tem de ficar virado para dentro, no sentido da blindagem.

   Aperte o parafuso central de fixação da lâmina com um binário de 100 a 120 Nm.

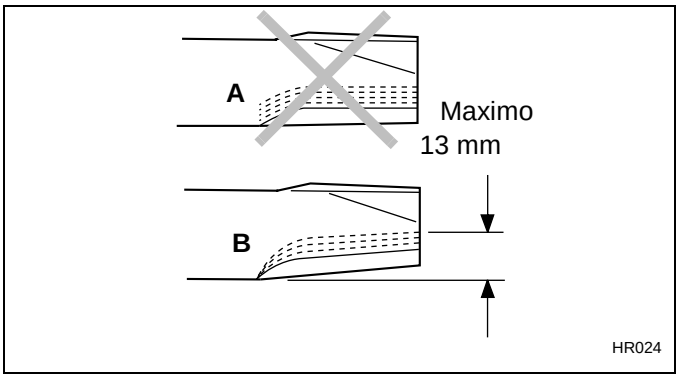


Fig. 4B

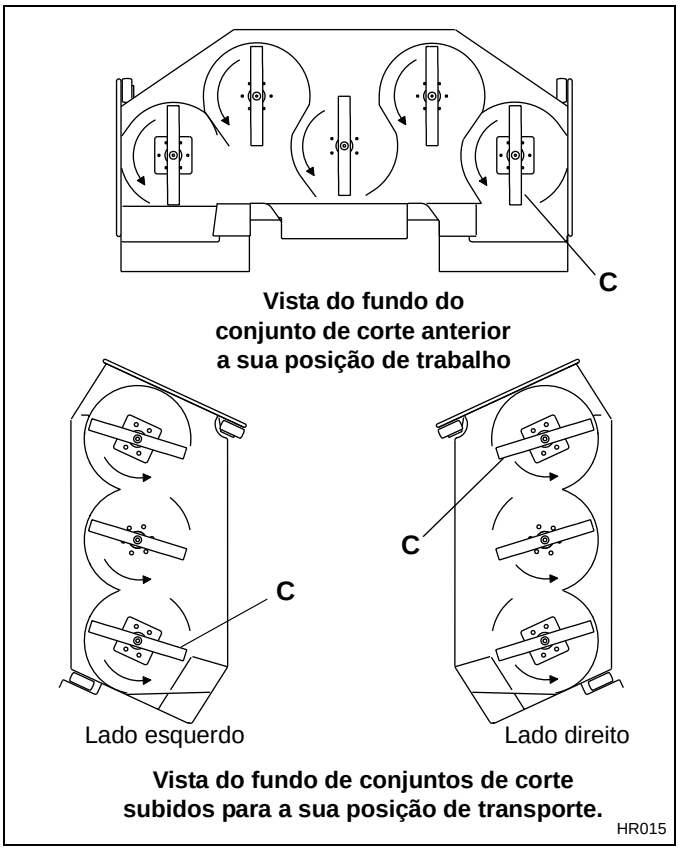


Fig. 4C

4.4 MOTOR

IMPORTANTE: ***Um Manual separado do motor, elaborado pelo fabricante do motor, é fornecido com o motor. Lei atentamente o manual do motor até ficar familiarizado com sua operação e manutenção. A atenção apropriada às orientações do fabricante do motor assegurará a máxima vida útil do motor. Para pedidos de mais exemplares do manual do motor, entre em contacto com o fabricante do motor.***

A rodagem adequada de um motor novo pode trazer consideráveis benefícios para o desempenho e para a vida útil do motor.

Durante o período de rodagem, Jacobsen recomenda o seguinte:

1. Durante as primeiras 50 horas de operação, deve-se permitir que um motor novo atinja uma temperatura operacional de pelo menos 60°C antes de funcionar a toda carga.
2. Verifique o nível de óleo do motor duas vezes por dia durante as primeiras 50 horas de operação. Um consumo de óleo superior ao normal é habitual durante o período inicial de rodagem.
3. Troque o óleo do motor e o óleo do elemento do filtro após as primeiras 50 horas de operação.
4. Verifique e afinação as correias do ventilador e do alternador.
5. Consulte ao Secção 4.23 e o Manual do motor sobre intervalos específicos de manutenção.

Caso a bomba injectora, os injectores ou o sistema de combustível requeiram assistência, entre em contacto com o distribuidor Jacobsen.

Nota: *O tractor destina-se a operar e a cortar da maneira mais eficiente com a configuração pré-ajustada do regulador. Não altere os afinações do regulador do motor nem aplique velocidade excessiva ao motor.*

4.5 OLEO DE MOTOR

Verifique o óleo do motor no início de cada dia, antes de ligar o motor.Se o nível do óleo for baixo, retire a tampa da abertura de enchimento e ateste com a quantidade ecessária para atingir o traço de marcação MAX na vareta.

Faça a mudança inicial do óleo após as primeiras 25 horas de operação e, a partir dessa altura, de 250 em 250 horas. Consulte o Manual do Motor.

Use somente óleos para motor com classificação API CD-II, CE, CF-4. Consulte o Manual do Motor para especificações completas.

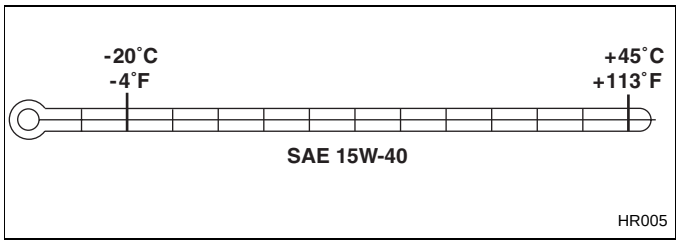


Fig. 4D

4.6 SILENCIADOR E ESCAPE

⚠ AVISO

O fumo do escape contém monóxido de carbono que é tóxico e pode ser fatal quando inalado.

NUNCA opere um motor em local onde não haja ventilação adequada.

Para se proteger contra envenenamento por monóxido de carbono, inspeccione regularmente o sistema de escape completo e substitua sempre um silenciador danificado. Se observar uma mudança de cor ou de som no escape, desligue imediatamente o motor. Identifique o problema e proceda à reparação no sistema.

Aplique binário uniformemente em todas as ferragens da tubagem do escape. Aperte ou substitua as braçadeiras do escape.

4.7 FILTRO DE AR DE DIESEL

Verifique diariamente o indicador de serviço. Substitua o elemento do depurador do ar logo que surja a fita vermelha **(A)**.

Não remova o elemento para inspecção ou limpeza. Uma remoção desnecessária do filtro aumenta o risco de penetração de poeiras ou de outras impurezas no motor.

Quando for necessário um serviço, primeiro limpe a parte externa da carcaça do filtro; depois disso, remova o elemento usado da maneira mais cuidadosa possível e elimine-o.

1. Limpe cuidadosamente a parte interna da carcaça do filtro sem deixar entrar poeiras na entrada de ar.
2. Inspeccione o novo elemento. Não utilize um elemento danificado e nunca use um elemento incorrecto.
3. Monte o novo elemento e certifique-se de que ele está instalado adequadamente. Reajuste o indicador pressionando o botão **(B)**.
4. Recoloque a tampa certificando-se de que ela fica completamente vedada em torno da carcaça do filtro. O evacuador de poeiras deve estar virado para baixo **(C)**.
5. Verifique todas as mangueiras e condutas de ar. Aperte as braçadeiras das mangueiras.

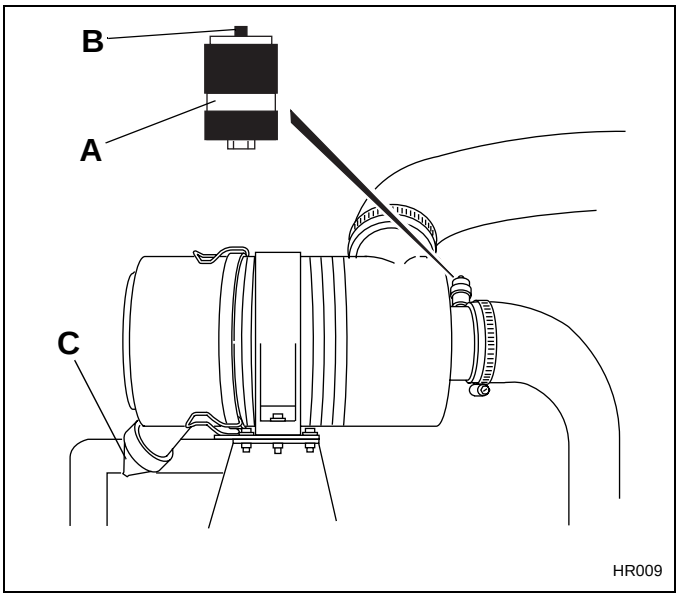


Fig. 4E

4.8 COMBUSTÍVEL

Manuseie o combustível com cautela; ele é altamente inflamável. Utilize um recipiente aprovado; o tubo de vazar deve ser encaixado dentro do gargalo do recipiente de combustível. Evite usar latas e funis para meter combustível.

⚠ AVISO

Nunca remova a tampa de combustível do tanque de combustível, ou coloque combustível quando o motor estiver em funcionamento ou ainda estiver quente.

Não fume quando estiver a manusear o combustível. Nunca encha ou drene o tanque de combustível em recinto fechado.

Evita derramar combustível. Se houver derrame, lave imediatamente.

Nunca manuseie ou armazene recipientes contendo combustível na proximidade de chamas ou de qualquer dispositivo que possa provocar faísca e inflamar o combustível ou os vapores do combustível.

Certifique-se de que recolocou e apertou firmemente a tampa do combustível.

- Encha o tanque até uma polegada 25 mm da parte inferior do gargalo de entrada.
- Use combustível limpo e novo, Diesel #2. A taxa mínima de cetano é de 45. Consulte o manual para obter informações adicionais.
- Substitua linhas de combustível e braçadeiras ao primeiro sinal de danos.
- Armazene combustível em conformidade com as regulamentações municipais, estatais e federais e com as recomendações do fornecedor de combustível.
- Nunca encha em excesso o tanque nem deixe que o tanque fique vazio.

Leia o Manual do Motor para mais informações sobre o combustível.

4.9 SISTEMA DE COMBUSTÍVEL

Consulte o Section 4.23 para obter informações sobre os intervalos de manutenção.

Leia o Manual do Motor para processos detalhados.

Antes de substituir qualquer filtro, limpe completamente a caixa do filtro e a área em torno do filtro. Não permita a penetração de sujidades no sistema de combustível.

Faça a purga do sistema de combustível depois do filtro e das linhas do combustível terem sido retirados ou depois do reservatório ter ficado vazio.

Substituição do filtro de combustível

1. Feche a válvula de combustível no reservatório e retire e deite fora o filtro existente.
2. Aplique uma ligeira camada de óleo no vedante e aperte à mão o novo filtro.
3. Encha o reservatório de combustível. Abra totalmente a válvula no reservatório e purgue o filtro. Consulte o manual do motor. Limpe imediatamente qualquer derrame de combustível.

4.10 BATERIA

Certifique-se de forma absoluta de que o interruptor de ignição está “desligado” e de que a chave foi retirada antes de realizar qualquer serviço na bateria.

⚠ CUIDADO

Utilize sempre ferramentas isoladas, use óculos de segurança ou de protecção e roupa de protecção quando estiver a trabalhar com baterias. Deverá ler e obedecer a todas as instruções do fabricante da bateria.

Aperte os cabos firmemente nos terminais da bateria e aplique uma leve camada de massa dielétrica de silicone nos terminais e nas extremidades dos cabos para evitar corrosão. Mantenha as tampas de respiro e as coberturas do terminal instaladas.

Mantenha os terminais dos cabos, a bateria e os seus terminais sempre bem limpos.

Verifique a polaridade da bateria antes de ligar ou desligar os cabos da bateria.

1. Ao instalar a bateria, monte sempre primeiro o cabo de bateria VERMELHO, positivo (+), e, por último, o cabo PRETO, de terra, negativo (-).
2. Ao remover a bateria, remova sempre primeiro o cabo de terra, PRETO, negativo (-), e o cabo positivo (+) VERMELHO por último.
3. Certifique-se de que a bateria está apropriadamente instalada e presa à bandeja da bateria.

⚠ AVISO

A bateria, os terminais e os acessórios relacionados contêm chumbo e seus compósitos, químicos reconhecidos pelo Estado da Califórnia como causadores de cancro e problemas de reprodução. **Lave as suas mãos após manuseá-los.**

4.11 ARRANQUE INDUZIDO

Antes de tentar o “arranque induzido” no tractor, verifique a condição de descarga da bateria. Section 4.10.

⚠ AVISO

Baterias libertam gás hidrogénio, que é explosivo. Para reduzir o risco de explosão, evite produzir centelhas próximo à bateria. Ligue sempre o cabo negativo de ligação directa à estrutura do tractor com a bateria descarregada, afastado da bateria.

Ao ligar cabos de ligação directa:

1. Desligue o motor no veículo com uma bateria em bom estado.
2. Ligue o cabo VERMELHO de ligação directa ao terminal positivo (+) na bateria em bom estado e ao terminal positivo (+) na bateria “descarregada”.
3. Ligue o cabo PRETO de ligação directa proveniente do terminal negativo (-) da bateria em bom estado à **estrutura** do tractor que está com a bateria descarregada.

Depois de os cabos terem sido ligados, arranque o motor no veículo com a bateria em bom estado e em seguida arranque o tractor.

4.12 CARREGAR A BATERIA

AVISO

Carregue a bateria numa área bem ventilada. Baterias emitem gases explosivos. Para evitar explosão, mantenha chamas afastadas da bateria.

Para evitar lesões, fique afastado da bateria quando o carregador estiver ligado. Uma bateria danificada pode explodir.

1. Consulte o Secção 4.10. Leia o Manual da Bateria e o Manual do Carregador para instruções específicas.
2. Sempre que possível, remova a bateria do tractor antes de a carregar. Se a bateria não for selada, verifique se o electrólito recobre os elementos em todas as células.
3. Certifique-se de que o carregador está “Desligado”. Em seguida, ligue o carregador aos terminais da bateria conforme especificado no Manual do Carregador.
4. Desligue sempre o carregador antes de desligar o carregador dos terminais da bateria.

4.13 MANGUEIRAS HIDRÁULICAS

AVISO

Para evitar lesões graves provocadas por óleo quente a alta pressão, nunca use as mãos para verificar fugas de óleo; utilize papel ou papelão.

Fluido hidráulico em fuga sob pressão pode ter força suficiente para penetrar através da pele. Se houver penetração de fluido na pele ele deve ser removida cirurgicamente dentro de poucas horas por um médico especializado neste tipo de lesão, caso contrário poderá resultar em gangrena.

1. Baixe sempre os utensílios até ao solo, desengate todos os accionadores, engrene o travão de estacionamento e retire a chave antes de inspeccionar ou desligar linhas ou mangueiras hidráulicas.
2. Verifique mangueiras e tubos visíveis diariamente. Observe se não há mangueiras húmidas ou manchas de óleo. Substitua mangueiras e tubos gastos ou danificados antes de usar a máquina.
3. Ao substituir tubos ou mangueiras, instale-as na mesma posição que as anteriores; não desloque braçadeiras, suportes e presilhas para uma nova posição.
4. Inspeccione completamente todos os tubos, mangueiras e conexões a cada 300 horas.

IMPORTANTE: O sistema hidráulico pode ser permanentemente danificado se o óleo ficar contaminado. Antes de desligar qualquer componente hidráulico, limpe a área em torno dos encaixes e das extremidades das mangueiras para que impurezas não penetrem no sistema.

a. Antes de desligar qualquer componente hidráulico, coloque uma etiqueta ou marque a localização de cada mangueira; depois, limpe a área em torno dos encaixes.

b. Quando desligar o componente, esteja preparado para colocar tampões e tampas nas extremidades das mangueiras e nos orifícios abertos. Isto impedirá a penetração de impurezas dentro do sistema e também evitará derrames de óleo.

c. Certifique-se de que os O-Ring estão limpos e de que os encaixes das mangueiras estão adequadamente assentados antes de apertar.

d. Não deixe as mangueiras ficarem torcidas. Mangueiras torcidas podem provocar afrouxamento dos acoplamentos quando a mangueira flexionar durante a operação, resultando em vazamentos de óleo.

e. Mangueiras dobradas ou torcidas podem restringir o fluxo de óleo fazendo com que o sistema funcione deficientemente e o óleo sofra sobreaquecimento, podendo também provocar falhas da mangueira.

4.14 ÓLEO HIDRÁULICO

Consulte o Secção 4.23 sobre os intervalos específicos de manutenção.

Drene e substitua o óleo hidráulico após um defeito importante de componente, ou se notar presença de água ou espuma no óleo ou um odor rançoso (indicando calor excessivo).

Substitua sempre o filtro hidráulico ao mudar o óleo.

Para mudar o óleo hidráulico:

1. Limpe a área em torno da tampa do óleo para evitar a penetração de impurezas e a contaminação do sistema.
2. Remova o tampão de dreno do fundo do tanque.
3. Depois do óleo ser drenado, instale o tampão de dreno e encha com óleo hidráulico da Jacobsen.
4. Purgue o ar do sistema.
   a. Faça funcionar todas as funções do tractor durante cerca de 5 minutos até que todo o ar contido no sistema tenha sido eliminado e o nível do óleo fique estabilizado. Durante esse tempo, o alarme do nível do óleo tem de se ouvir.
   b. Depois do nível ter estabilizado e do ar ter sido purgado, encha o reservatório até ao traço de marcação existente na vareta. Ligue o motor e verifique que o alarme do óleo se mantém desligado.

4.15 FILTROS HIDRÁULICOS

O sistema hidráulico é protegido por dois filtros de 10 micra: um filtro de carga **(B)** e um filtro na linha de retorno **(A)**. A passagem do fluido através dos filtros é monitorizada durante o serviço. Quando a perda de pressão através dos filtros é excessiva, a luz de aviso do filtro do óleo hidráulico acende. Para garantir protecção contínua do sistema hidráulico, substitua os filtros logo que possível se a lâmpada se mantiver acesa mesmo depois do fluido hidráulico ter aquecido.

Nota: *Durante a estação fria, a lâmpada de aviso pode acender até o óleo ficar à temperatura de serviço. Aguarde até o óleo ter aquecido e a lâmpada apagar antes de começar a trabalhar com o tractor.*

Substituição dos filtros hidráulicos:

Substitua os filtros uma vez por ano ao mudar o fluido hidráulico, ou se a lâmpada de aviso do filtro no painel de instrumentos se mantiver acesa

O filtro da linha de retorno está instalado no lado esquerdo do radiador do óleo. O filtro de carga está instalado na parte mais baixa do quadro do tractor, atrás do braço de subida do lado esquerdo.

1. Retire os filtros usados.

   Nota: *Ao desmontar o filtro inferior de carga, sairá sempre algum óleo. Coloque um tabuleiro por baixo para recolher o óleo antes de retirar o filtro.*

2. Instale filtros novos. Dê somente um aperto à mão.
3. Ligue o motor no “mínimo” com o sistema hidráulico na posição neutra durante cinco minutos. O sinal sonoro de alarme do nível do óleo pode actuar durante esse período.
4. Verifique o nível de óleo hidráulico no reservatório e complete até a marca de cheio na vareta.

4.16 RADIADOR & RADIADOR DO ÓLEO

⚠ AVISO

Para evitar graves lesões corporais provocadas pelo refrigerante ou por jacto de vapor quente, nunca tente remover a tampa do radiador enquanto o motor estiver em funcionamento. Desligue o motor e espere que ele arrefeça. Mesmo assim, adopte extrema cautela ao remover a tampa.

⚠ CUIDADO

Não coloque água fria em cima de um radiador quente. Não coloque o motor em funcionamento sem a mistura adequada de refrigerante. Instale a tampa e aperte firmementento.

Verifique diariamente o nível do fluido refrigerante. O radiador deve estar cheio e o vaso de expansão deve estar cheio até ao traço de marcação **maximo**.

Se for preciso adicionar fluido refrigerante mais de uma vez por mês, ou adicionar mais de 1 litro de cada vez, mande verificar o sistema de refrigeração a uma oficina de Jacobsen.

Esvazie e volte a encher anualmente. Retire a tampa do radiador, abra a torneira do bloco do motor e a torneira do radiador. Esvazie e limpe o vaso de expansão.

Misture água limpa com anti-congelante à base de etilglicol para a temperatura ambiente mais baixa. Leia e siga as instruções na embalagem no anti-congelante e no manual do motor.

Mantenha limpas as passagens de ar do radiador e do radiador do óleo hidráulico. Use ar comprimido (a 208 kPa, no máximo) para limpar as palhetas.

Painel anterior

Inspeccione diariamente o painel anterior **(B)** e mantenha-o sempre limpo de aparas de relva, folhas e outros detritos que possam obstruir a passagem do ar através do radiador do óleo e do radiador.

Para desmontar o painel, retire a tampa de topo **(A)** do lado esquerdo do radiador do óleo. Empurre o painel e sopre do lado de trás com ar comprimido.

Radiador do óleo e radiador

Inspeccione diariamente o radiador do óleo e o radiador e mantenha-os sempre limpos para haver boa passagem de ar.

1. Retire o painel **(B)** da parte da frente do radiador de óleo
2. Solte os botões **(C)** localizados na parte de cima do radiador de óleo e retire a protecção de plástico da frente do radiador do óleo.
3. Solte a haste **(D)** no fundo do radiador e coloque a linha hidráulica à frente da haste para que a mangueira se possa movimentar livremente. Vire o radiador do óleo para cima e no sentido oposto ao do radiador, como se vê em **(E)**. Introduza a haste no furo existente no quadro para segurar o radiador do óleo na sua posição de serviço.
4. Use uma pistola de ar comprimido para limpar as palhetas do radiador e do radiador do óleo.
5. Após a limpeza, volte a colocar o radiador do óleo na sua posição normal em frente ao radiador. Fixe a haste **(D)** de forma a manter no lugar a linha hidráulica que passa por trás.
6. Volte a colocar o painel frontal e os revestimentos e instale os manípulos na parte de cima do radiador do óleo para fixar o conjunto no seu lugar.

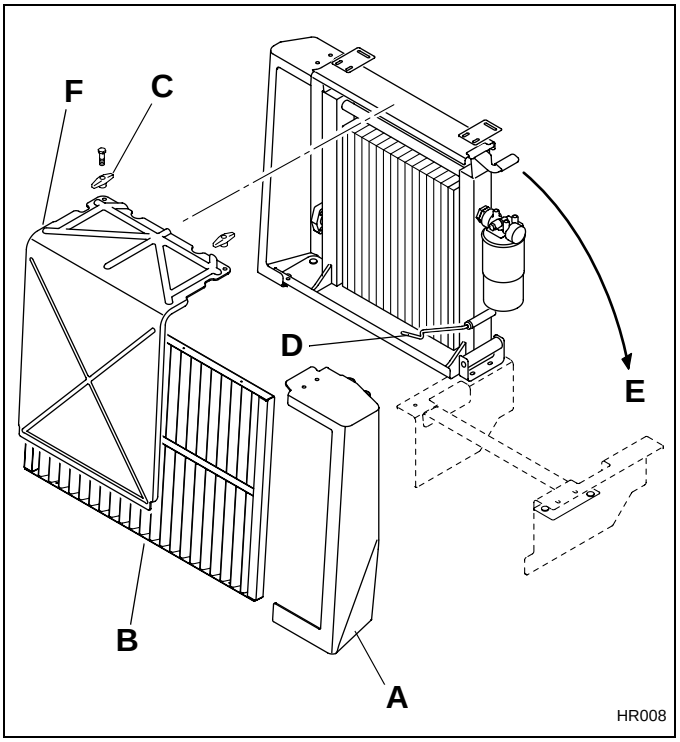


Fig. 4F

4.17 CUIDADOS E LIMPEZA

Lave o tractor e os utensílios após cada utilização. Mantenha o equipamento limpo.

Nota: *Não lave qualquer parte do equipamento enquanto ele estiver quente. Não utilize vaporizadores ou vapor com alta pressão. Use água fria e detergentes para automóveis.*

1. Utilize ar comprimido para limpar o motor e as alhetas do radiador. Uma pistola sopradora encontra-se à disposição no seu distribuidor Jacobsen.
2. Use exclusivamente água limpa para lavar o equipamento.

Nota: *O uso de água salgada ou de efluente favorece a formação de ferrugem e da corrosão de peças metálicas, donde resulta a deterioração prematura ou avaria. Danos dessa natureza não são cobertos pela garantia de fábrica.*

3. Não aplique vaporizadores de água directamente no painel de instrumentos, no interruptor de ignição, no controlador ou em quaisquer outros componentes eléctricos, ou nas carcaças e vedações dos mancais.
4. Limpe todo o acabamento de plástico ou borracha com uma solução fraca de sabão ou utilize detergentes para vinil/borracha disponíveis em estabelecimentos comerciais.

Faça reparações em superfícies de metal danificadas e utilize a tinta para retoques da Jacobsen. Encere o equipamento para protecção máxima da pintura.

⚠ CUIDADO

Limpe detritos das unidades de corte, accionadores, silenciadores e motor para evitar incêndios.

⚠ AVISO

NUNCA use as suas mãos para limpar as unidades de corte. Use uma escova para eliminar as aparas de relva das lâminas. As lâminas são extremamente afiadas e podem provocar ferimentos graves.

4.18 SISTEMA ELÉCTRICO

⚠ CUIDADO

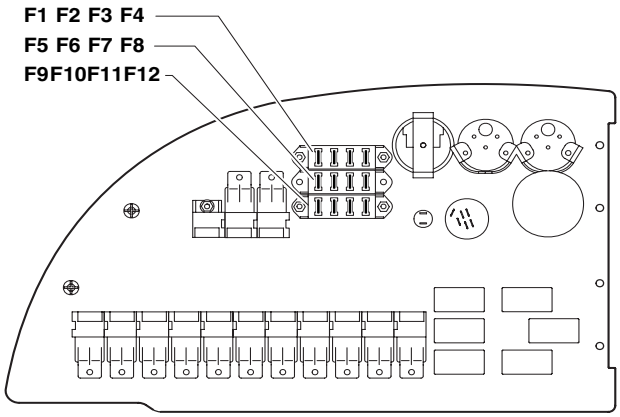
Desligue sempre o interruptor de ignição e remova o cabo negativo da bateria (preto) antes de inspeccionar ou trabalhar no sistema eléctrico.

Precauções gerais que podem ser adoptadas para reduzir problemas eléctricos são enumeradas abaixo.

1. Certifique-se de que todos os terminais e as conexões estão limpos e adequadamente presos.
2. Verifique regularmente o sistema de apoio do operador e os disjuntores.

   Se o apoio do operador não estiver a funcionar e o problema não puder ser corrigido, entre em contacto com o distribuidor autorizado da Jacobsen.
3. Mantenha todos os fios individuais afastados de peças móveis para evitar danos.
4. Certifique-se de que o interruptor da base está ligado ao comando principal.
5. Verifique a bateria e o circuito de carga da bateria.
6. Não lave ou aplique spray de pressão em torno de ligações e de componentes eléctricos.

Os circuitos eléctricos estão protegidos por um disjuntor (instalado por cima das baterias), por fusíveis e por relés montados por baixo do painel dos instrumentos (Fig. 4G e Tabela).



FUSÍVEIS

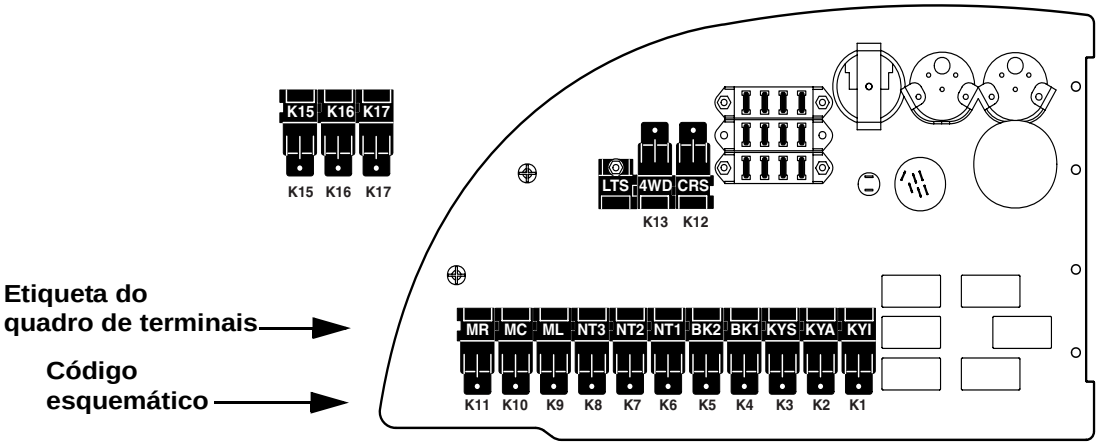
F1	5A	Sobressalente
F2	5A	Sobressalente
F3	15A	Sobressalente
F4	15A	Sobressalente
F5	5A	Ignição
F6	5A	Manómetros
F7	5A	Solenóide do combustível, velas de incandescência
F8	15A	Sistema de ar do banco
F9	5A	Comando da velocidade de cruzeiro
F10	5A	Solenóide para 4WD
F11	5A	Interruptores de fim de curso do conjunto de corte
F12	15A	Válvula do conjunto de corte

HR006

Fig. 4G

A Tabela mostra a localização e as funções básicas dos relés eléctricos localizados por baixo do painel de comando. Para informações mais detalhadas, deve consultar os esquemas eléctricos neste manual.

Verifique sempre o bom funcionamento do sistema de apoio ao condutor depois de trabalhos na instalação eléctrica!


K15 K16 K17
K15 K16 K17
LTS 4WD CRS
K13 K12
Etiqueta do quadro de terminais
Código esquemático
MR MC ML NT3 NT2 NT1 BK2 BK1 KYS KYA KYI
K11 K10 K9 K8 K7 K6 K5 K4 K3 K2 K1

Relé	Descrição	Funcionamento
KYA / K2	Interruptor de chave "A"	Mantém aberta a válvula de solenóide de paragem do combustível enquanto que o interruptor de ignição se encontra na posição MARCHA e o condutor está sentado. Dispara o dispositivo de relógio da vela de incandescência se o motor não estiver a trabalhar.
KYI / K1	Interruptor de chave "I"	Abre a válvula de solenóide de paragem do combustível quando o interruptor de ignição está na posição ARRANQUE, quando o interruptor de tomada de força está DESLIGADO e quando o travão de estacionamento e os interruptores neutros estão fechados.
KYS / K3	Interruptor de chave "S"	Acciona o motor de arranque quando o interruptor de ignição se encontra na posição ARRANQUE, o interruptor de tomada de força está em DESLIGADO e quando o travão de estacionamento e os interruptores neutros estão fechados.
BK1 / K4	Travão - Arranque	Parte do circuito de arranque. O relé fecha quando o travão de estacionamento está engatado.
BK2 / K5	Travão - Marcha	Desliga a corrente para o relé de comando da velocidade de cruzeiro (CRS) com o travão de estacionamento engatado. Desliga a corrente para a válvula do combustível quando o condutor sai do banco com o travão de estacionamento desengatado.
NT1 / K6	Neutro -Arranque	Parte do circuito de arranque. O relé fecha quando o pedal da tracção está na posição neutra.
NT2 / K7	Neutro - Marcha	Desliga a corrente para a válvula do solenóide de paragem do combustível quando o condutor sai do banco com o interruptor de posição neutra ainda aberto (pedal de tracção accionado).
NT3 / K8	Neutro - Velocidade de cruzeiro	Desliga a corrente para o comando da velocidade de cruzeiro quando o interruptor de posição neutra (pedal de tracção na posição neutra) está fechado.
ML / K9	Cortar - Conjunto de corte esquerdo	Excita o solenóide para a válvula do conjunto de corte esquerdo quando o conjunto é descido e o interruptor de tomada de força está LIGADO.
MC / K10	Cortar - Conjunto de corte central	Excita o solenóide para a válvula do conjunto de corte frontal quando o conjunto é descido e o interruptor da tomada de força está LIGADO.
MR / K11	Cortar - Conjunto de corte direito	Excita o solenóide para a válvula do conjunto de corte direito quando o conjunto é descido e o interruptor de tomada de corrente está LIGADO.
CRS / K12	Velocidade de cruzeiro	Excita o comando de velocidade de cruzeiro quando o interruptor do mesmo está fechado, quando o pedal de tracção está a ser accionado e quando o travão de estacionamento está desengatado.
4WD / K13	Tracção às quatro rodas	Excita o solenóide para a válvula da tracção à quatro rodas quando estão fechados o interruptor da tracção às quatro rodas no painel dos instrumentos e o sensor de avanço na bomba de tracção.
LTS	Luzes	Incluídas com o kit de luzes 5003564. Controla o funcionamento das luzes.
K15	Imobilizador	Desactiva o circuito quando a chave de ignição é rodada para a posição ARRANQUE.
K16	Auxiliar	Fornece energia ao circuito de ignição quando a chave de ignição é rodada para a posição MARCHA. Desactiva o circuito de ignição na posição ARRANQUE.
K17	Ignição	Fornece energia aos manómetros, ao circuito de corte, ao circuito de tracção e ao circuito do interruptor do assento.

4.19 PNEUS

⚠ CUIDADO

A menos que possua uma formação adequado, ferramentas e experiência, NÃO tente montar um pneu num aro. A montagem inadequada pode provocar explosões e resultar em lesões graves.

1. Mantenha os pneus adequadamente cheios para prolongar a vida útil dos pneus. Verifique a pressão quando os pneus estiverem frios. Inspeccione o desgaste dos sulcos.
2. Verifique a pressão de 50 em 50 horas, ou uma vez por mês. Use um manómetro de pressão rigoroso para pneus de baixa pressão.
3. Mantenha os pneus à pressão correcta:

   Tractor: 138 -152 kPa
   Conjuntos de corte: 138 -173 kPa

4.20 PROCEDIMENTO DE MONTAGEM DE RODAS

Rodas do tractor

⚠ AVISO

Certifique-se de que o tractor está estacionado numa superfície sólida e plana. Nunca realize trabalhos num tractor que esteja apoiado somente no macaco. Utilize sempre suportes de macaco.

Se apenas as rodas dianteiras ou traseiras do tractor estiverem levantadas, coloque calços à frente e atrás das rodas que não estão levantadas.

1. Remova sujidades, massa e óleo das roscas dos pinos. Não lubrifique as roscas.
2. Posicione a roda no cubo e inspeccione para se certificar de que há contacto completo entre a superfície de montagem da roda e o cubo ou tambor de travão.
3. Aperte com os dedos todos os parafusos e depois aplique um binário em sequência transversal; aperte sempre as roscas na posição de topo.

NOTA: *Verifique diariamente o aperto das porcas dos pneus até às primeiras 100 horas de funcionamento.*

4. Após receber o novo equipamento, ou se os pneus foram retirados, verifique diariamente o aperto das porcas dos pneus até que o aperto se mantenha entre 88-102 Nm.

Rodízios

Para aumento da vida dos rolamentos, inspeccione e regule os rodízios e as rodas de nivelar todos anos. Lubrifique os rolamentos de 100 em 100 horas de serviço com massa lubrificante NLGI Grau 2.

1. Levante o equipamento para que as rodas deixem de estar em contacto com o solo e possam rodar livremente à mão.
2. Verifique a folga das rodas **(I)**. As rodas devem poder rodar livremente com folga zero.
3. Para eliminar folgas, aperte a porca interna **(G)** até que a roda comece a prender. Seguidamente, desaperte ¼ de volta. Fixe a porca interna na sua posição por meio da porca externa **(H)**. Não deixe que a porca interna rode enquanto aperta a porca externa.
4. Repita o passo 2 e verifique a folga.

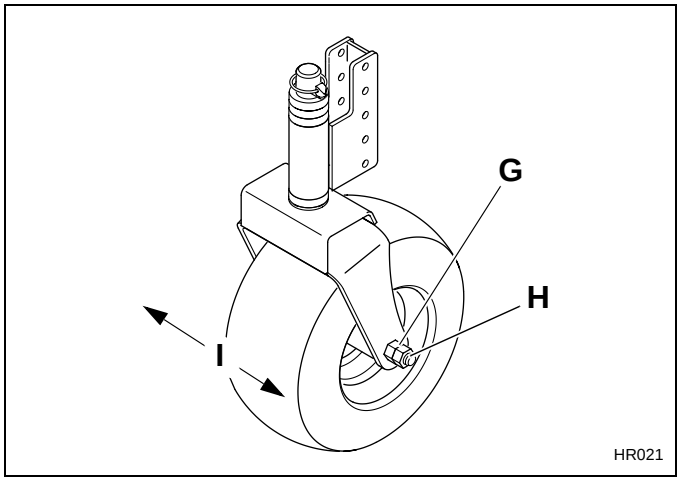


Fig. 4H

4.21 SISTEMA ROPS

Um Sistema ROPS projectado para este tractor está disponível como acessório opcional. Se seu tractor estiver equipado com este dispositivo, o inspecione periodicamente e siga os procedimentos operacionais descritos no Manual de Segurança & Operação.

⚠ CUIDADO

Não solte ou remova parafusos; não solde, fure, modifique, dobre ou endireite uma estructura avariada.

1. O banco, o cinto de segurança, a montagem dos equipamentos e de quaisquer acessórios no interior do sistema ROPS devem ser inspeccionados periodicamente, fazendo-se a substituição imediata de todos os componentes danificados.
2. Depois do sistema ROPS ter sofrido qualquer tipo de impacto, tem de ser substituído.
3. Verifique e restabeleça o binário em todos os componentes. Todos os componentes sobressalentes para ROPS (estrutura de protecção contra capotamento) têm de estar em conformidade com as especificações da Lista de Peças de Jacobsen.

4.22 ARMAZENAMENTO

Considerações gerais

1. Lave completamente o tractor e lubrifique-o. Repare e pinte partes de metal danificadas ou expostas.
2. Inspeccione o tractor, aperte todas as ferragens, substitua componentes gastos ou danificados.
3. Drene e encha novamente o radiador.
4. Limpe completamente os pneus e armazene o tractor de tal forma que a carga não fique sobre os pneus. Se o tractor não estiver sobre suportes de macaco, verifique os pneus a intervalos regulares e encha conforme necessário.
5. Mantenha a máquina e todos os seus acessórios limpos, secos e protegidos contra a intempéries durante o armazenamento. Nunca armazene equipamento próximo a chamas abertas ou faíscas que possam inflamar combustível ou vapores de combustível.

Bateria

1. Remova, limpe e armazene a bateria em posição vertical e em local fresco e seco.
2. Verifique e recarregue a bateria a intervalos de 60/90 dias enquanto ela estiver armazenada.
3. Armazene a bateria em local fresco e seco. Para reduzir a taxa de auto-descarga, a temperatura ambiente não deve estar acima de 27°C ou abaixo de -7°C; deve-se evitar que o electrólito congele.

Motor

1. Quando o motor estiver morno, remova o tampão de drenagem, drene o óleo do cárter e troque o filtro de óleo. Instale o tampão de drenagem e encha com óleo novo. Aperte o bujão de drenagem com um binário de 30 Nm.
2. Limpe a parte externa do motor. Pinte partes de metal expostas ou aplique uma leve camada de óleo contra a corrosão.
3. Adicione um condicionador de combustível ou um biocida para evitar a congelação ou o aparecimento de bactérias no combustível. Consulte o seu fornecedor local de combustíveis.

Unidades de Corte

1. Lave completamente as unidades de corte; depois disso, repare e pinte partes de metal danificadas ou expostas.
2. Lubrifique todos os encaixes e pontos de fricção.
3. Aplique uma ligeira película de óleo contra a corrosão nos gumes de corte das lâminas.

Após o Armazenamento

1. Verifique e reinstale a bateria.
2. Verifique ou faça serviços de inspecção ao filtro de combustível e ao filtro de ar.
3. Verifique o nível de refrigerante do radiador.
4. Verifique o nível de óleo no cárter do motor e no sistema hidráulico.
5. Encha o tanque de combustível com combustível novo. Sangre o sistema de combustível.
6. Certifique-se de que os pneus estão adequadamente insuflados.
7. Remova todo o óleo dos rolos de lâminas e da lâmina fixa. Afinação a lâmina fixa e a altura de corte.
8. Ligue e opere o motor a 1/2 do acelerador. Aguarde um período de tempo suficiente para o motor ficar adequadamente aquecido e lubrificado.

⚠ AVISO

Nunca mantenha o motor a trabalhar sem ventilação adequada; os gases de escape podem ser fatais se forem inalados.

4.23 TABELA DE MANUTENÇÃO

⚠ AVISO

Antes de limpar, ajustar ou reparar este equipamento, desengate todos os accionadores, baixe os utensílios até ao solo, engrene o travão de estacionamento, desligue o motor e retire a chave da ignição para evitar lesões.

Para uma operação suave de todas as alavancas, dos pontos de pivô e de outros pontos de fricção que não são mostrados na tabela de lubrificação aplique algumas gotas de óleo SAE 30 a cada 50 horas ou conforme necessário.

Retire as rodas e renove a carga lubrificante dos mancais.

Intervalos recomendados para revisões e lubrificações

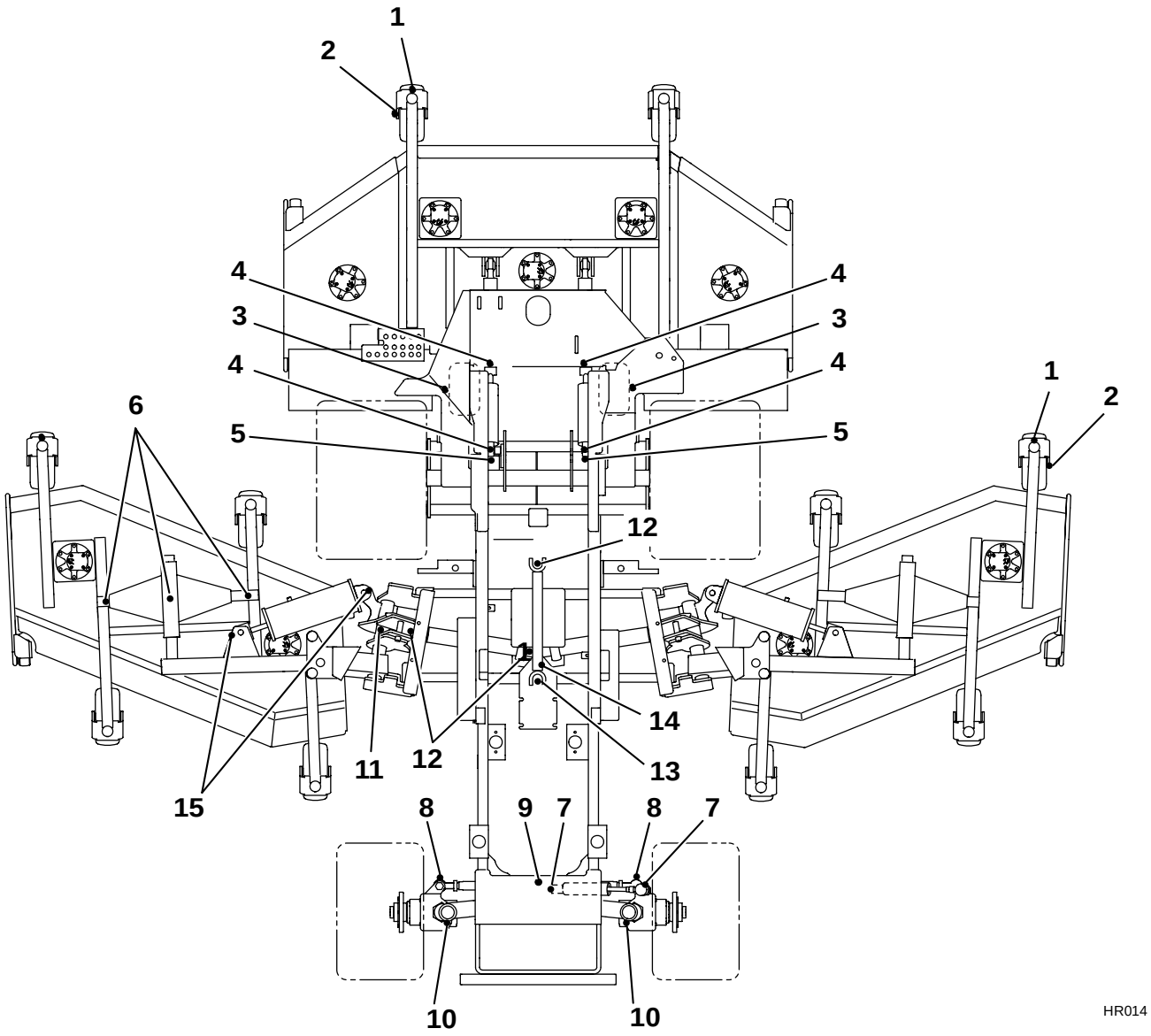
	Diaria-mente Antes	De 25 em 25 horas	De 50 em 50 horas	De 100 em 100 horas	De 250 em 250 horas	Anual-mente	Ver Secção	Lubrifi-cante tipo
Indicador do depurador do ar	I						4.7	
Elemento do depurador do ar	R-AR					R	4.7	
Bateria				I-C		I-C	4.10	
Rolamentos dos rodízios		A*		L		I-A	4.20	I
Correia da ventoinha do motor		I*		I-A			**	
Óleo do motor	I-A	R*			R		4.5	III
Filtro do óleo do motor		R*			R		4.5	
Filtro do óleo						R	4.9	
Dreno de água do filtro de com-bustível				C			**	
Lubrificadores para massa F1			L				4.24	II
Lubrificadores para massa F2				L			4.24	II
Fluido hidráulico	I-A					R	4.14	IV
Filtros para o fluido hidráulico	R-AR					R	4.15	
Radiador do óleo	I-C***						4.16	
Painel do radiador	I-C						4.16	
Fluido refrigerante do radiador	I-A					R	4.16	
Pneus	I****					I-A	4.19	

A - Adicionar ou regular C - Limpar I - Inspeccionar L- Lubrificar R - Substituir AR - Conforme necessário

* Indica revisão inicial para máquinas novas.
** Ver o Manual do Motor.
***Limpar conforme necessário.
**** Verifique diariamente o aperto das porcas dos pneus até às primeiras 100 horas de funcionamento.

I Lubrificar rolamentos com NLGI Grau 2 (Classe de serviço LB).
II Pistola de lubrificação manual com NLGI Grau 2 (Classe de serviço LB).
III Óleo do motor - Ver Secção 4.5.
IV Óleo hidráulico VG ISO 68 de Jacobsen.

4.24 TABELA DE LUBRIFICAÇÃO



Localização dos lubrificadores de massa

F1 - 50 horas (semanal)		Quant.
1	Fusos dos rodízios	(10)
2	Eixos dos rodízios	(10)
3	Eixos das rodas de nivelar	(2)
4	Cilindro de subida - Conjunto de corte frontal	(4)
5	Braço de subida - Conjunto de corte frontal	(2)
6	Pivôs dos conjuntos de corte laterais	(6)
7	Cilindro da direcção	(2)
8	Tirante	(2)
9	Pivô do eixo	(1)
10	Pivô da roda	(2)
11	Braço de subida - conjunto de corte lateral	(2)
12	Cilindro de subida - conjunto de corte lateral	(4)

F2 - 150 horas		Quant.
13	Junta em U do eixo motor	(2)
14	Junta deslizante do eixo motor	(1)
15	Pivô da caixa de retorno	(6)

5 REPARAÇÃO DE AVARIAS

5.1 CONSIDERAÇÕES GERAIS

A tabela de resolução de problemas apresentada a seguir indica os problemas básicos que podem ocorrer no início e durante o funcionamento. Para obter informações mais detalhadas em relação aos sistemas hidráulico e eléctrico, entre em contacto com o distribuidor Jacobsen da sua área.

Sintomas	Causas possíveis	O que fazer
Motor não pega.	1. Travão de estacionamento desengatado ou interruptor da tomada de força ligado.	1. Verifique o sistema de apoio ao condutor e o processo de arranque.
	2. Vela de incandescência não esgotou o tempo.	2. Leve o interruptor de ignição à posição inicial e dê à vela de incandescência o tempo necessário antes de arrancar.
	3. Bateria com pouca carga ou avariada.	3. Verifique o estado da bateria e as ligações da bateria.
	4. Reservatório de combustível vazio ou sujo.	4. Encha com combustível fresco. Substitua o filtro do combustível. Purgue a tubagem do combustível.
	5. Fusível fundiu.	5. Substitua o fusível.
	6. Relé(s) avariado(s).	6. Verifique e substitua o relé.
	7. Pedal de tracção não está em neutro.	7. Verifique a posição do pedal. Regule as uniões.
	8. Interruptor de neutro na bomba de accionamento não está a trabalhar.	8. Teste, regule ou substitua o interruptor.
	9. Sensor de avanço na bomba de accionamento não está a trabalhar.	9. Teste, regule ou substitua o interruptor.
Motor custa a pegar ou trabalha mal.	1. Baixo nível de combustível, combustível sujo ou filtro sujo.	1. Encha com combustível fresco. Substitua o filtro de combustível. Purgue a tubagem de combustível.
	2. Depurador do ar sujo.	2. Verifique e substitua o filtro de ar.
	3. Injectores, bomba de combustível.	3. Consulte o manual do motor.
	4. Problema no motor.	4. Consulte o manual do motor.
Motor pára.	1. Reservatório de combustível vazio.	1. Encha com combustível fresco e purgue a tubagem de combustível.
	2. Interlocks não activados antes do condutor sair.	2. Engate o travão de estacionamento e coloque o interruptor de cortar em DESLIGADO.
Motor aquece demasiado.	1. Baixo nível de refrigerante.	1. Verifique e adicione refrigerante.
	2. Entrada de ar obstruída.	2. Limpe a entrada de ar no radiador.
	3. Correia da bomba de água partida ou frouxa.	3. Estique ou substitua a correia. Consulte o manual do motor.
Bateria não carrega.	1. Terminais soltos ou corroídos.	1. Inspeccione e limpe os terminais.
Lâmpada da bateria acesa.	2. Electrólito baixo.	2. Encha até ao nível correcto.
	3. Correia do alternador frouxa ou partida.	3. Estique ou substitua a correia. Consulte o manual do motor.
	4. Sistema de carga avariado.	4. Consulte o manual do motor.
Unidades de corte não cortam regularmente.	1. Alturas de corte não afinadas regularmente.	1. Assegure-se de que os conjuntos de corte estão nivelados. Verifique e regule a altura de corte.
	2. Velocidade do motor demasiado baixa.	2. Verifique o regime do motor com a borboleta na sua posição mais rápida.
	3. Velocidade de corte não ajustada às condições da relva.	3. Regule a velocidade de corte para o melhor corte.
	4. Pressão do ar nos rodízios mal regulada.	4. Verifique os pneus e a pressão do ar no seu interior.

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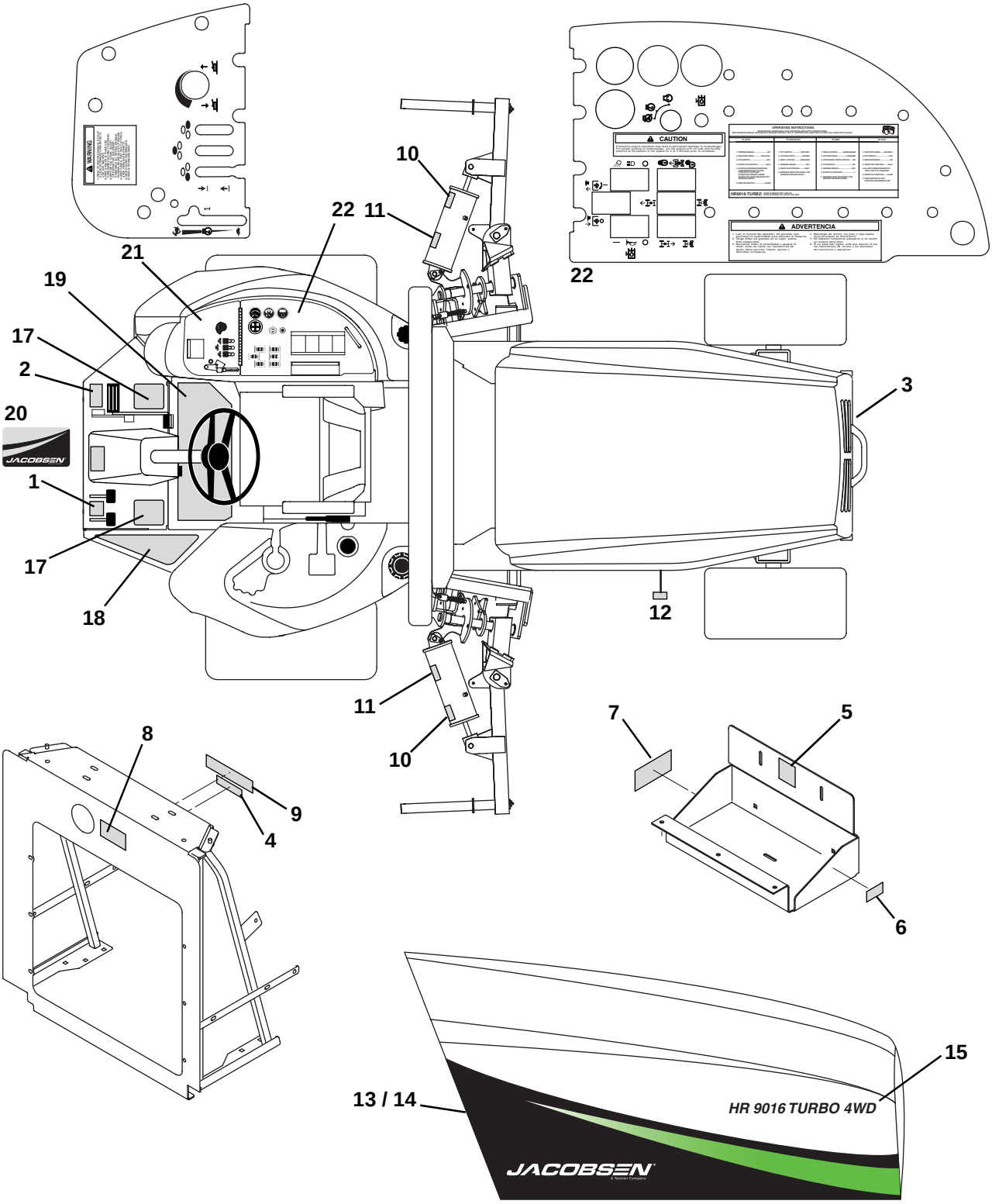
Serial No. All

1.1 Decals-Tractor



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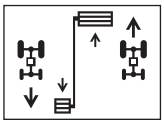
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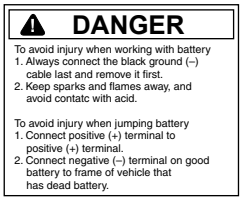
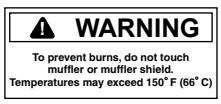

DANGER
To avoid injury when working with battery
1. Always connect the black ground (–) cable last and remove it first.
2. Keep sparks and flames away, and avoid contatc with acid.
To avoid injury when jumping battery
1. Connect positive (+) terminal to positive (+) terminal.
2. Connect negative (–) terminal on good battery to frame of vehicle that has dead battery.
5



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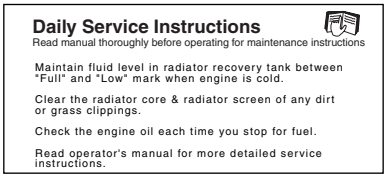
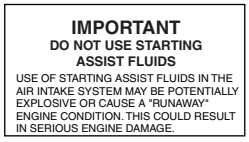
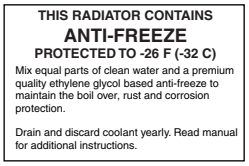

Daily Service Instructions
Read manual thoroughly before operating for maintenance instructions
Maintain fluid level in radiator recovery tank between "Full" and "Low" mark when engine is cold.
Clear the radiator core & radiator screen of any dirt or grass clippings.
Check the engine oil each time you stop for fuel.
Read operator's manual for more detailed service instructions.
7


IMPORTANT
DO NOT USE STARTING ASSIST FLUIDS
USE OF STARTING ASSIST FLUIDS IN THE AIR INTAKE SYSTEM MAY BE POTENTIALLY EXPLOSIVE OR CAUSE A "RUNAWAY" ENGINE CONDITION. THIS COULD RESULT IN SERIOUS ENGINE DAMAGE.
8

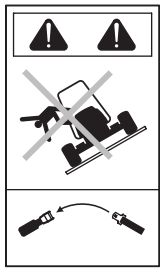

THIS RADIATOR CONTAINS
ANTI-FREEZE
PROTECTED TO -26 F (-32 C)
Mix equal parts of clean water and a premium quality ethylene glycol based anti-freeze to maintain the boil over, rust and corrosion protection.
Drain and discard coolant yearly. Read manual for additional instructions.
9

10

11

20

WARNING
This structure's proctective capability may be impaired by structural damage, overturn, or alteration.
If any of these conditions occur, the structure must be replaced.
16

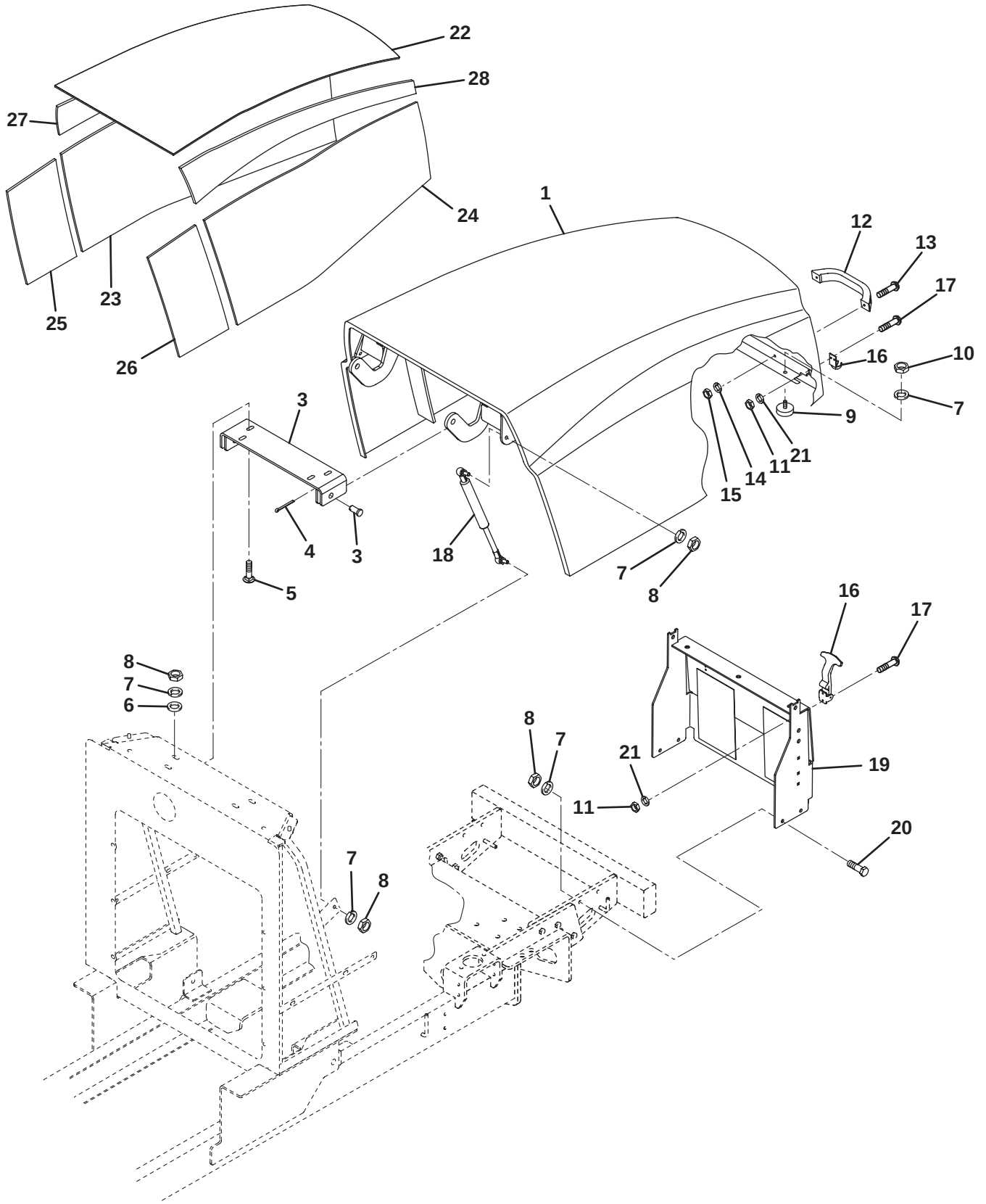

23

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	360053	1	Decal, Brake	
2	3008521	1	Decal, Traction	
3	2812396	1	Decal, Towing Caution	
4	365956	1	Decal, Radiator Cap Warning	
5	3001435	1	Decal, Battery Danger	
6	339237	1	Decal, Heat Warning	
7	363994	1	Decal, Daily Service	
8	3000435	1	Decal, Start Assist Fluids	
9	363995	1	Decal, Antifreeze	
10	363704	2	Decal, Latch Pin Warning	
11	3009266	2	Decal, Stored Energy Warning	
12	4125771	1	Decal, Patent	
13	4122243	1	Decal, Left Side Stripe	
14	4122244	1	Decal, Right Side Stripe	
15	4124692	2	Decal, HR-9016 Turbo 4WD	
16	557844	1	Decal, ROPS Structure	Used On 70529 Only
17	3004287	2	Pad, Center Panel	
18	3009268	1	Pad, Step	
19	3009267	1	Pad, Floorboard	
20	4124759	1	Emblem, Jacobsen	
21	3009073	1	Decal, Control Panel	
22	4137295	1	Decal, Instrument Panel	
23	5002952	1	Decal, ROPS Seat Belt	Used On 70529 Only

> Change from previous revision

2.1 Hood

Serial No. All



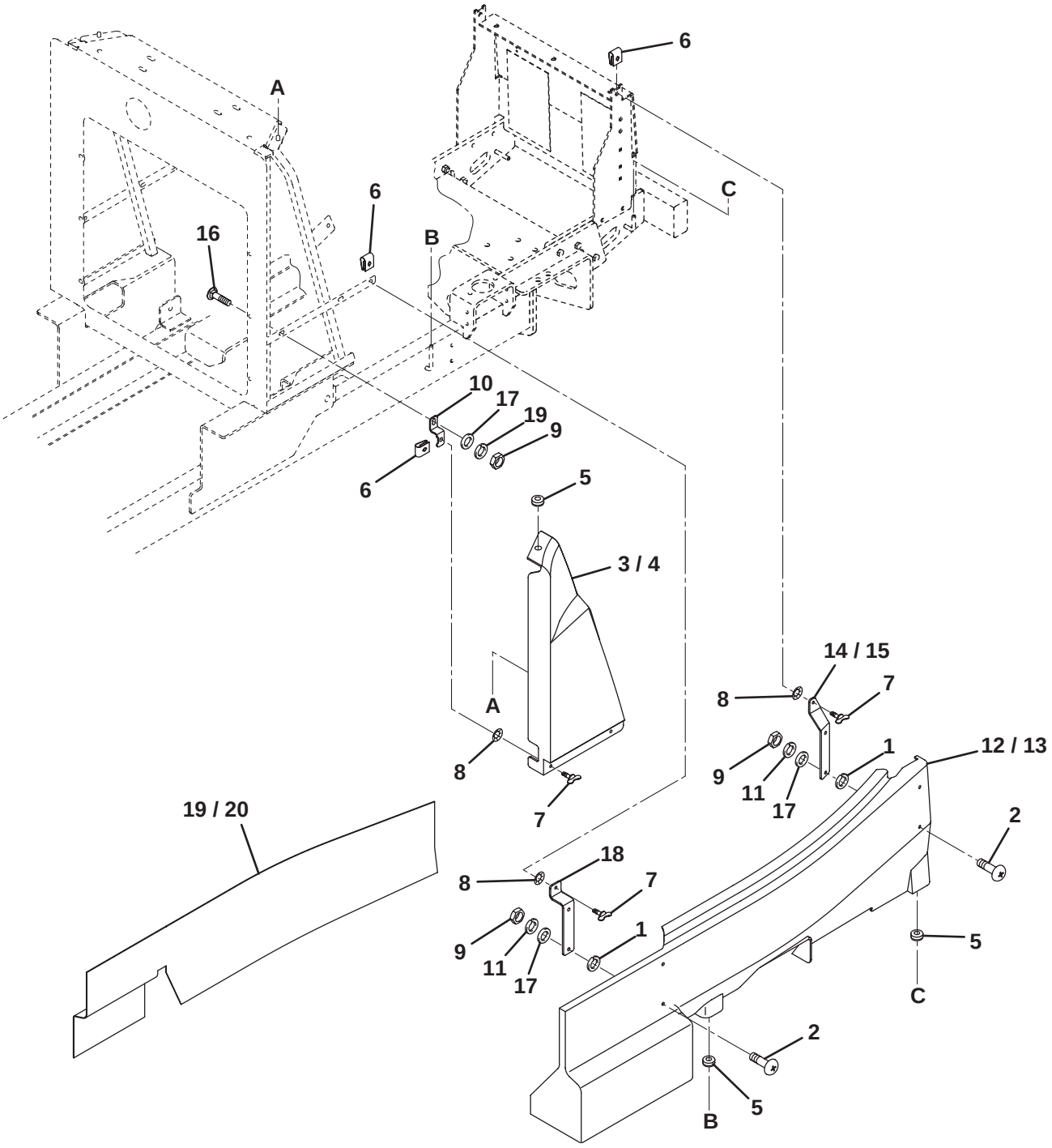
9016-21

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4126099	1	Hood	
2	1003679	1	Pivot, Hood	
3	3006644	2	Pin, Special Clevis	
4	460028	2	Cotter pin, 1/8 x 1”	
5	440120	4	Carriage Bolt, 3/8-16 x 1-1/4”	
6	452008	4	Flat Washer, 3/8	
7	446142	8	Lockwasher, 3/8 Heavy	
8	443110	6	Nut, 3/8-16 Hex	
9	354989	2	Stop, Rubber	
10	443112	2	Nut, 3/8-24 Hex	
11	444310	8	Nut, #10-24 Hex	
12	340795	1	Handle, Hood	
13	402230	2	Screw, 1/4-20 x 1” Slotted	
14	446128	2	Lockwasher, 1/4	
15	443102	2	Nut, 1/4-20 Hex	
16	1004686	2	Latch, Flexible Draw	
17	403914	8	Screw, #10-24 x 3/4” Truss Head	
18	3009793	2	Spring, Gas	Model 70528 and 70529
18	3009793	1	Spring, Gas (One Side Only	Model 70530
18	2809834	1	Spring, Gas (One Side Only)	Model 70530 Only
19	4136563	1	Support, Rear Hood	
20	400264	4	Screw, 3/8-16 x 1-1/4” Hex Head	
21	446116	8	Lockwasher, #10	
22	4119015	1	Foam, Top Hood	
23	4119016	1	Foam, Lower Rear Side Hood-Left	Model 70530 Only
24	4119017	1	Foam Lower Rear Side Hood-Right	Model 70530 Only
25	4119018	1	Foam, Lower Front Hood-Left	Model 70530 Only
26	4119019	1	Foam, Lower Front Hood-Right	Model 70530 Only
27	4119020	1	Foam, Upper Hood-Left	Model 70530 Only
28	4119021	1	Foam, Upper Hood-Right	Model 70530 Only

> Change from previous revision

3.1 Cowlings and Skirts

Serial No. All

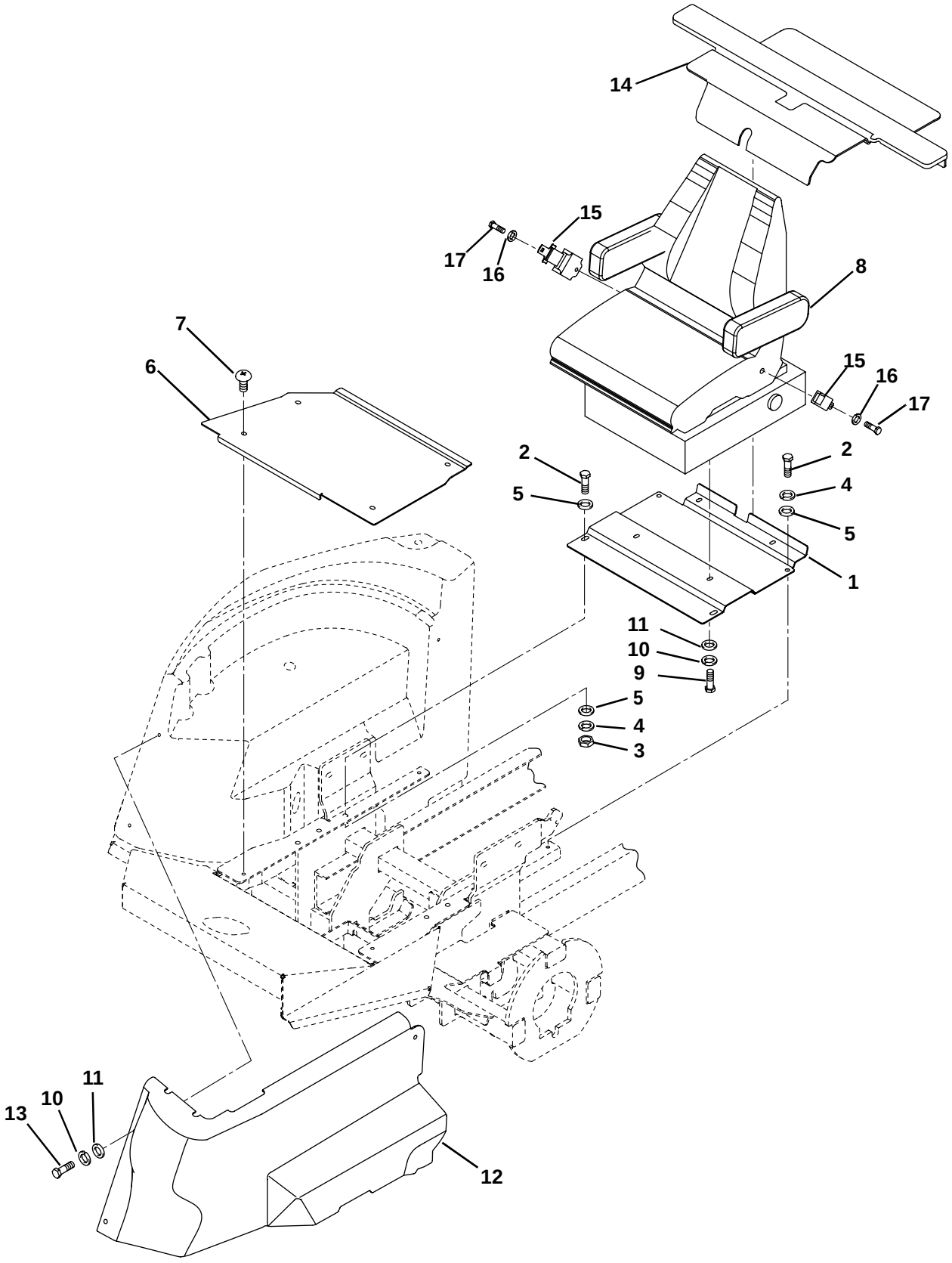


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	447414	8	Lockwasher, 3/8 External Tooth	
2	404118	8	Screw, 3/8-16 x 7/8” Truss Head	
3	3006663	1	Left Side Cowling	
4	3006664	1	Right Side Cowling	
5	352604	6	Grommet	
6	3005604	8	Receptacle, #85 1/4 Turn	
7	3007704	8	Stud, #85 1/4 Turn	
8	3005603	8	Retainer	
9	443110	12	Nut, 3/8-16 Hex	
10	3006915	4	Bracket, Cowling Mounting	
11	446142	8	Lockwasher, 3/8 Heavy	
12	3006723	1	Left Side Skirt	
13	3006724	1	Right Side Skirt	
14	3007099	1	Bracket, Left Side Skirt Mounting	
15	3007100	1	Bracket, Right Side Skirt Mounting	
16	440120	4	Carriage Bolt, 3/8-16 x 1-1/4”	
17	452008	12	Flat Washer, 3/8	
18	3008015	2	Bracket, Front Skirt	
19	4119022	1	Foam, Side Skirt-Right	Model 70530 Only
20	4119023	1	Foam, Side Skirt-Left	Model 70530 Only

> Change from previous revision

4.1 Seat Pan and Heat Shield

Serial No. All



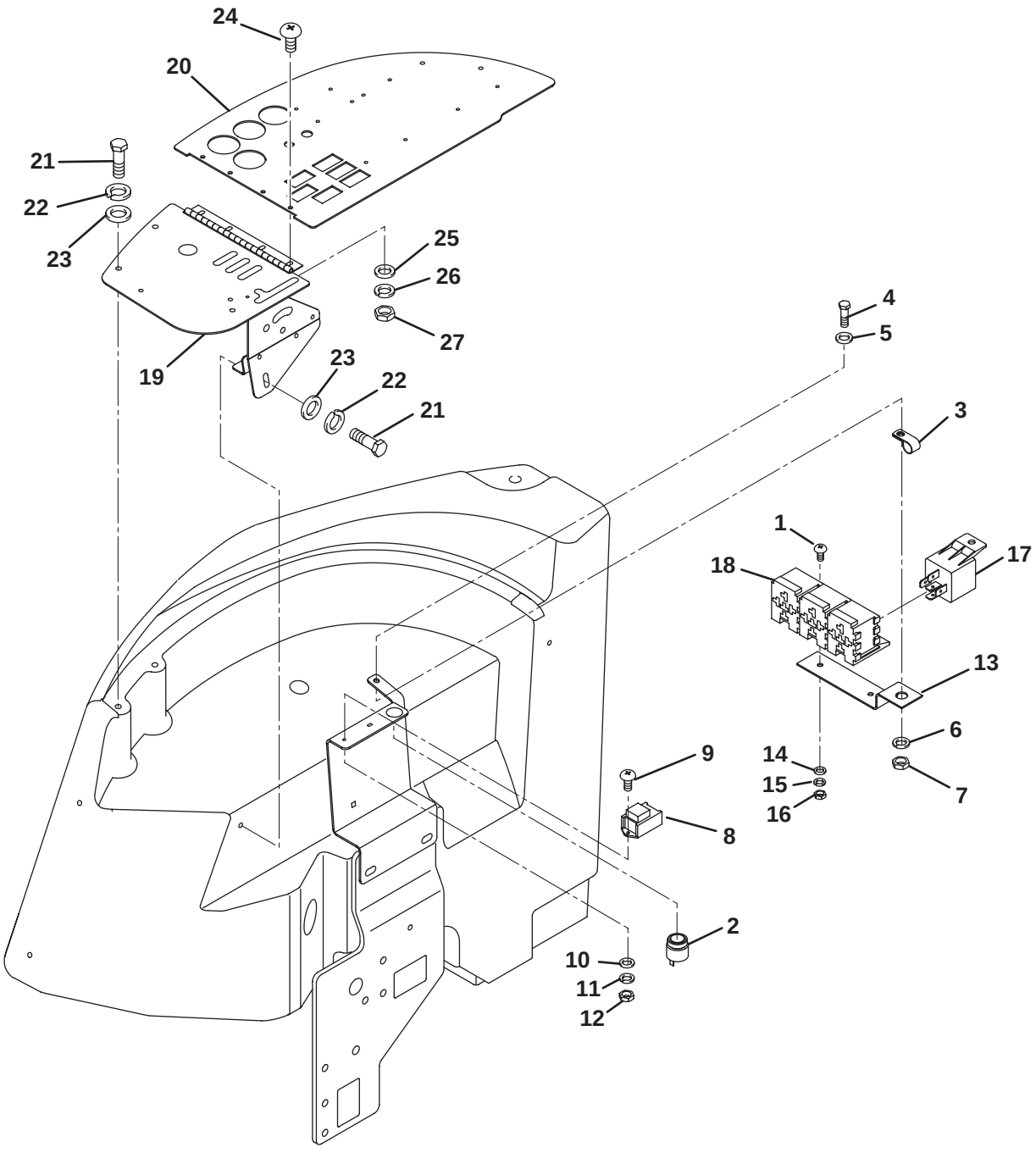
9016-25

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3007032	1	Seat Pan	
2	400264	4	Screw, 3/8-16 x 1-1/4” Hex Head	
3	443110	2	Nut, 3/8-16 Hex	
4	446142	4	Lockwasher, 3/8 Heavy	
5	452008	6	Flat Washer, 3/8	
6	5003457	1	Plate, Floorboard	
7	404118	4	Screw, 3/8-16 x 7/8” Truss Head	
8	–	1	Seat with Air Suspension	
	5003625	1	• Air Ride Suspension	**See 47.1**
	5003626	1	• Seat Assembly	**See 48.1**
9	361005	4	Screw, M8-1.25 x 25mm Hex Head	
10	446136	7	Lockwasher, 5/16 Heavy	
11	452006	7	Flat Washer, 5/16	
12	3006880	1	Heat Shield	
13	400182	3	Screw, 5/16-18 x 5/8” Hex Head	
14	3010013	1	Shield, Floor	Used On 70528 and 70530
14	3010789	1	Shield, ROPS Floor	Used On 70529
15	5003617	1	Seat Belt Assembly	Used On 70529 Only
16	400370	2	Screw, 7/16-20 x 1” Hex Head	Used On 70529 Only
17	446148	2	Lockwasher, 7/16 Heavy	Used On 70529 Only

> Change from previous revision

Serial No. All

5.1 Control Panel Mounting

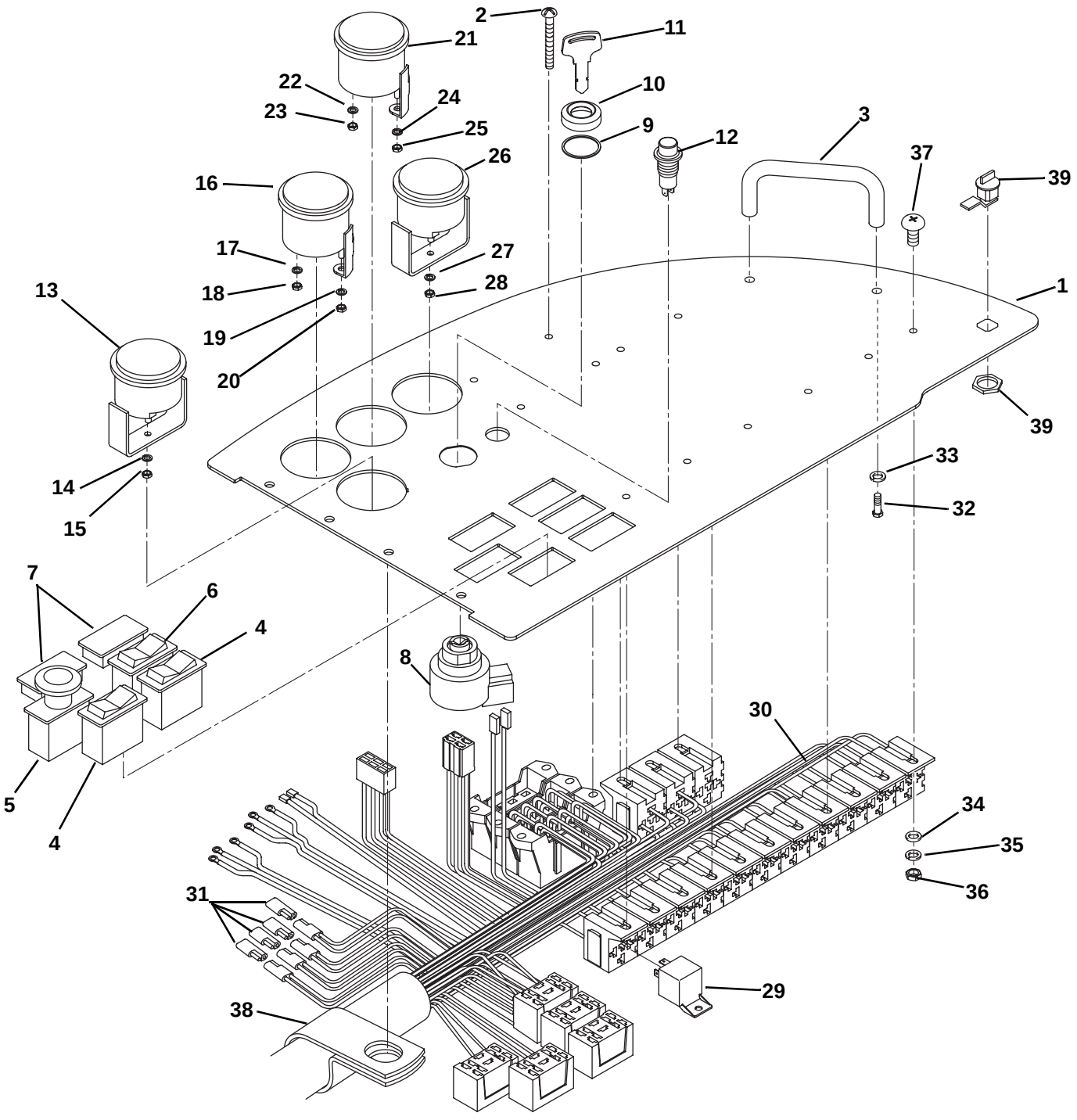


	Item	Part No.	Qty.	Description	Serial Numbers/Notes
	1	403910	2	Screw, #10-32 x 1/2” Truss Head	
	2	366670	1	Horn	**REFERENCE U11, See 68.1**
	3	364016	1	Clamp, Wire Harness	
	4	400260	1	Screw, 3/8-16 x 7/8” Hex Head	
	5	453011	1	Flat Washer, 3/8	
	6	446140	1	Lockwasher, 3/8	
	7	443110	1	Nut, 3/8-16 Hex	
	8	3009544	1	Relay, Time Delay	**REFERENCE U2, See 68.1**
	9	403860	2	Screw, #8-32 x 5/8” Truss Head	
	10	453004	2	Flat Washer, #8	
	11	446112	2	Lockwasher, #8 Heavy	
	12	444306	2	Nut, #8-32 Hex	
	13	2822524	1	Bracket, Relay	
	14	452002	2	Flat Washer, #10	
	15	446118	2	Lockwasher, #10	
	16	444310	2	Nut, #10-24 Hex	
>	17	3001307	3	Relay, SPDT with Resistor	**REFERENCE K15, K16, K17, See 68.1**
	18	REF	1	Harness, Kubota Key Switch	**See 45.1**
	19	–	1	Control Panel	**See 7.1 and 8.1**
	20	–	1	Instrument Panel	**See 5.1**
	21	400182	3	Screw, 5/16-18 x 5/8” Hex Head	
	22	446134	3	Lockwasher, 5/16	
	23	453009	3	Flat Washer, 5/16	
	24	404022	4	Screw, 1/4-20 x 1” Truss Head	
	25	453023	4	Flat Washer, 1/4	
	26	446128	4	Lockwasher, 1/4	
	27	443102	4	Nut, 1/4-20 Hex	

> Change from previous revision

Serial No. All

6.1 Instrument Panel



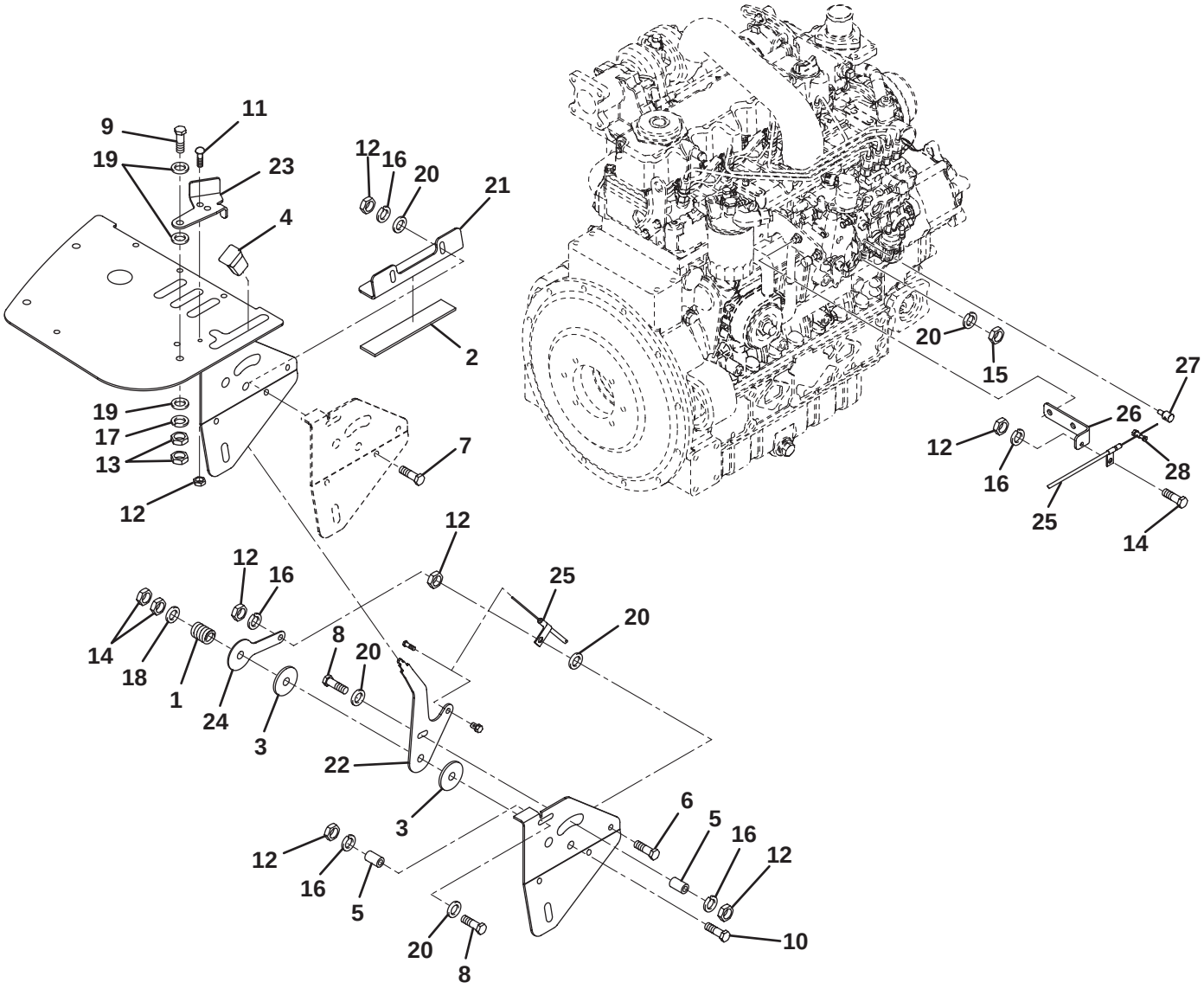
9016-01

	Item	Part No.	Qty.	Description	Serial Numbers/Notes
>	1	4116910	1	Panel, Dash	
	2	403920	4	Screw, #10-24 x 2-1/2” Truss Head	
	3	366283	1	Handle	
	4	3006446	2	Switch, Test / 4WD-Reverse	**REFERENCE SW12 & SW14, See 68.1**
>	5	2721505	1	Switch, PTO	**REFERENCE SW3, See 68.1**
>	6	3006436	1	4WD Switch	**REFERENCE SW13, See 68.1**
	7	3006509	2	Hole Plug	
>	8	2810269	1	Switch, Ignition	**REFERENCE SW1, See 68.1**
>	9	N/S	1	• Lockwasher	
>	10	N/S	1	• Nut	
>	11	2811020	1	• Key	
	12	366751	1	Indicator Light, Yellow	**REFERENCE U8, See 68.1**
	13	1002679	1	Gauge, Warning Light	**REFERENCE U5, See 68.1**
		5003091	3	• Light Bulb and Socket	
	14	447006	1	• Lockwasher, #10 External Tooth	
	15	444310	1	• Nut, #10-24 Hex	
	16	3005121	1	Gauge, Water Temperature	**REFERENCE U10, See 68.1**
	17	447002	3	• Lockwasher, #6 External Tooth	
	18	444304	3	• Nut, #6-32 Hex	
	19	447206	2	• Lockwasher, #8 Internal Tooth	
	20	444306	2	• Nut, #8-32 Hex	
	21	365943	1	Gauge, Fuel Level	**REFERENCE U9, See 68.1**
	22	447002	3	• Lockwasher, #6 External Tooth	
	23	444304	3	• Nut, #6-32 Hex	
	24	447206	2	• Lockwasher, #8 Internal Tooth	
	25	444306	2	• Nut, #8-32 Hex	
	26	162723	1	Gauge, Hour Meter	**REFERENCE U3, See 68.1**
	27	447006	1	• Lockwasher, #10 External Tooth	
	28	444310	1	• Nut, #10-24 Hex	
	29	3001307	13	Relay, SPDT With Resistor	**REFERENCE K1 ~ K13, K15 ~ 17, See 68.1**
	30	REF	1	Wire harness, Console	**See 45.1**
		5003278	8	• Fuse, 5 Amp (Tan)	**REFERENCE F1, F2, F5 ~ F7, F9 ~ F11 See 68.1**
		5003281	4	• Fuse, 15 Amp (Light Blue)	**REFERENCE F3, F4, F8, F12, See 68.1**
	31	555846	3	• Diode	**REFERENCE D1 ~ 4, See 68.1**
	32	400106	2	Screw, 1/4-20 x 5/8” Hex Head	
	33	446128	2	Lockwasher, 1/4	
	34	452002	12	Flat Washer, #10	
	35	446118	12	Lockwasher, #10 Heavy	
	36	444310	12	Nut, #10-24Hex	
	37	403910	8	Screw, #10-24 x 1/2” Truss Head	
	38	364016	1	Clamp, Wire Harness	
	39	1004992	1	Latch, Panel	

> Change from previous revision

7.1 Throttle Cable

Serial No. All

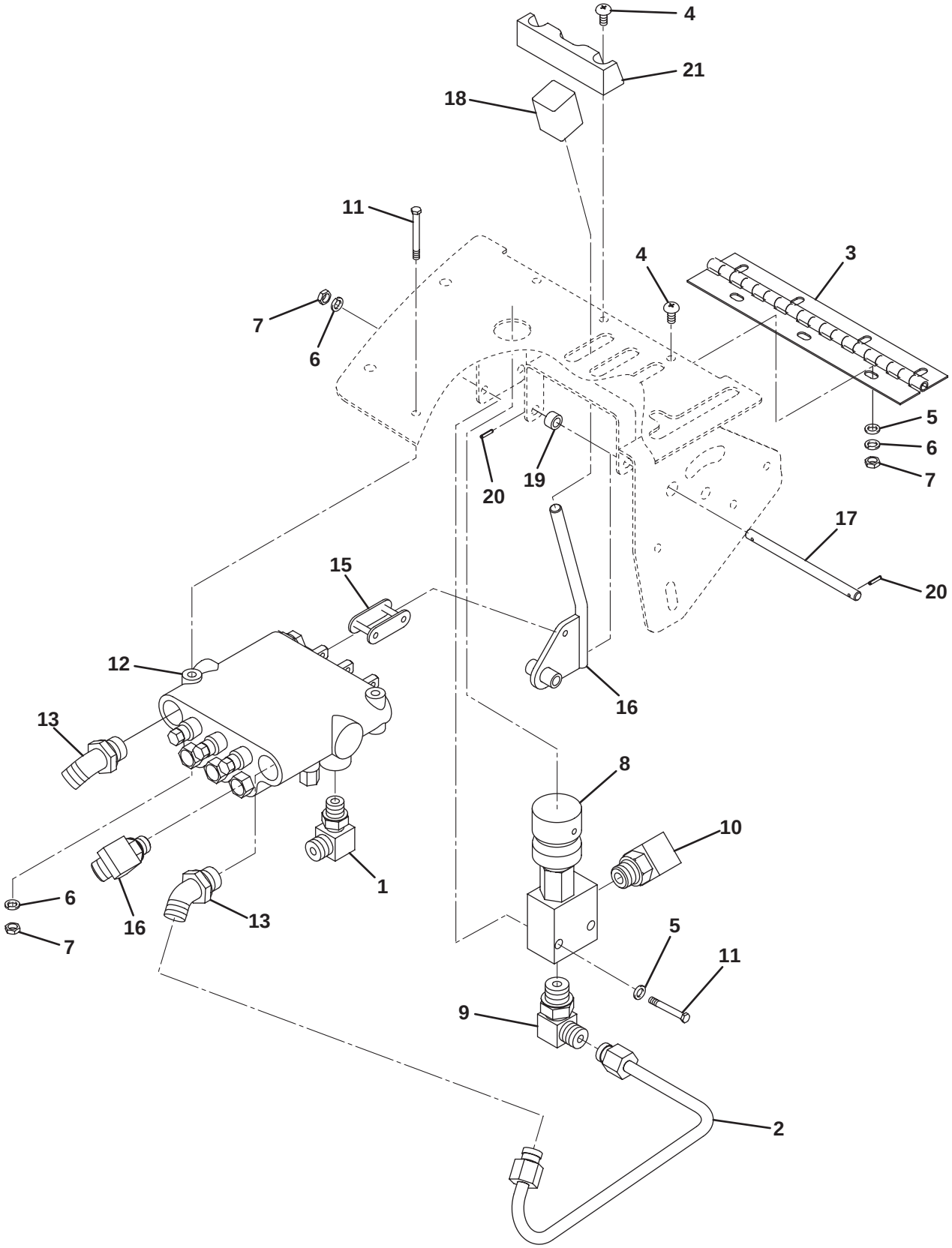


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	351956	1	Spring, Compression	
2	359979	1	Pad, Cork/Rubber, Bulk	
3	360885	2	Disc, Friction	
4	366768	1	Knob, Throttle	
5	367176	2	Spacer	
6	400108	1	Screw, 1/4-20 x 3/4” Hex Head	
7	400110	2	Screw, 1/4-20 x 7/8” Hex Head	
8	400116	2	Screw, 1/4-20 x 1-1/2” Hex Head	
9	400188	1	Screw, 5/16-18 x 1” Hex Head	
10	400274	1	Screw, 3/8-16 x 2-1/2” Hex Head	
11	440040	1	Bolt, Carriage 1/4-20 x 5/8”	
12	443102	7	Nut, 1/4-20 Hex	
13	443106	2	Nut, 5/16-18 Hex	
14	443110	3	Nut, 3/8-16 Hex	
15	444708	2	Locknut, 1/4-20 Center	
16	446130	5	Lockwasher, 1/4” Heavy	
17	446134	1	Lockwasher, 5/16”	
18	452008	1	Flat Washer, 3/8”	
19	453009	3	Flat Washer, 5/16”	
20	453023	6	Flat Washer, 1/4”	
21	3006729	1	Tab, Throttle Support	
22	3006730	1	Lever, Throttle	
23	3008738	1	Stop, Throttle Control	
24	3008901	1	Plate, Back-up	
25	4136191	1	Throttle Cable Assembly	
26	4132650	1	Bracket, Throttle Linkage	
27	554988	1	Pivot, Throttle Cable	
28	303962	1	Throttle Linkage Catch	

> Change from previous revision

8.1 Lift Valve and Controls

Serial No. All



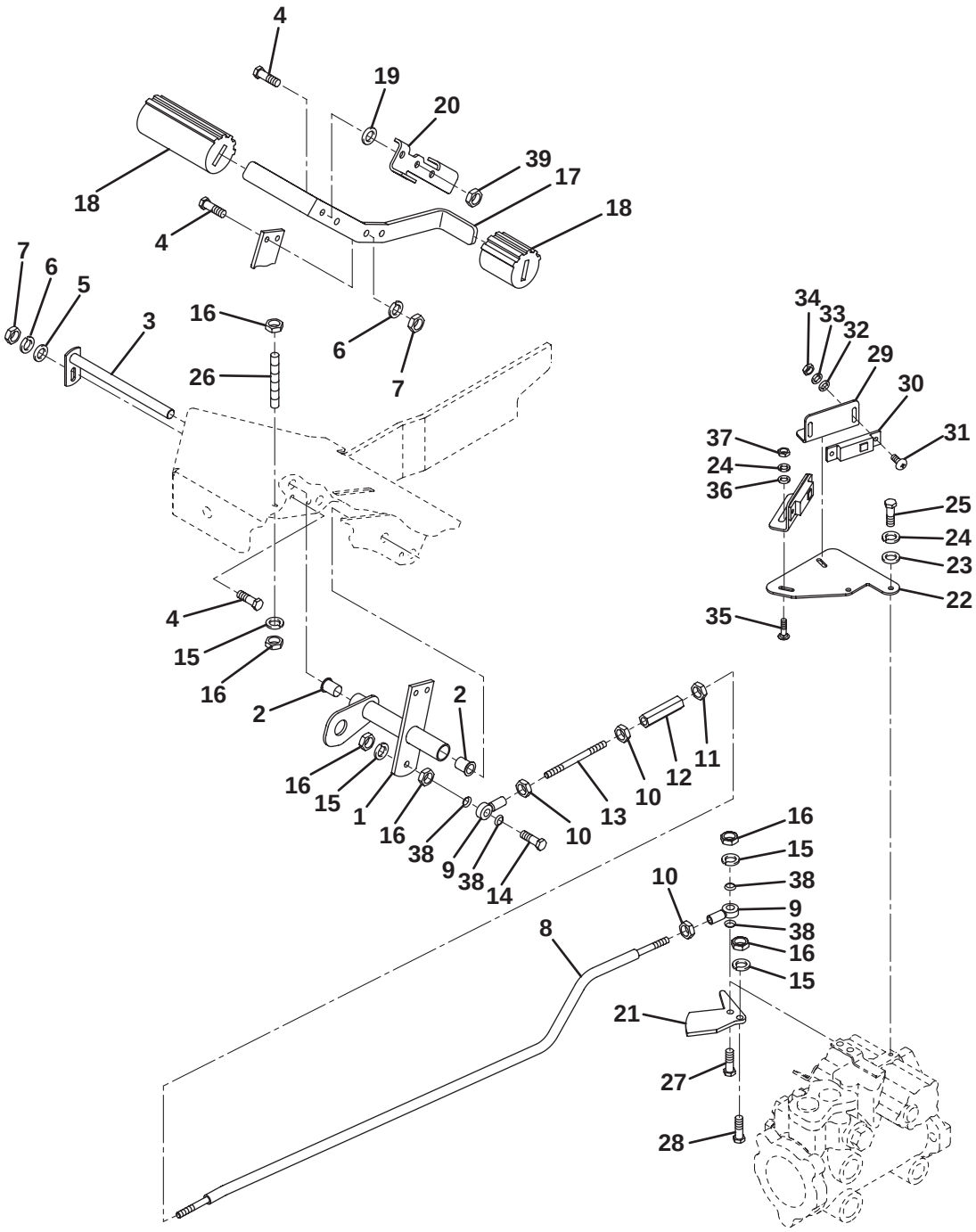
9016-14

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	340061	2	Adapter, 90°	
2	1003611	1	Tube, Lift Valve to Backpressure	
3	3006737	1	Hinge, Control Panel	
4	404022	3	Screw, 1/4-20 x 1” Truss Head	
5	453023	5	Flat Washer, 1/4	
6	446128	7	Lockwasher, 1/4	
7	443102	7	Nut, 1/4-20 Hex	
8	1004584	1	Backpressure Valve	
	5003539	1	• Seal Kit	
	5003538	1	• Adjusting Knob	
9	340062	1	Adapter, 90°	
10	340029	1	Adapter, 45°	
11	400120	4	Screw, 1/4-20 x 2” Hex Head	
12	1001802	1	Lift Valve	**See 52.1**
13	340027	2	Adapter, 45°	
14	340026	3	Adapter, 45°	
15	366133	3	Chain, Master Link With Clip	
16	1003100	3	Lever, Lift	
17	361833	1	Pin	
18	3005157	3	Knob	
19	367631	2	Spacer	
20	461356	2	Roll Pin, 3/32 x 1/2”	
21	3010082	1	Stop, Dash Panel	

> Change from previous revision

9.1 Accelerator Pedal

Serial No. All



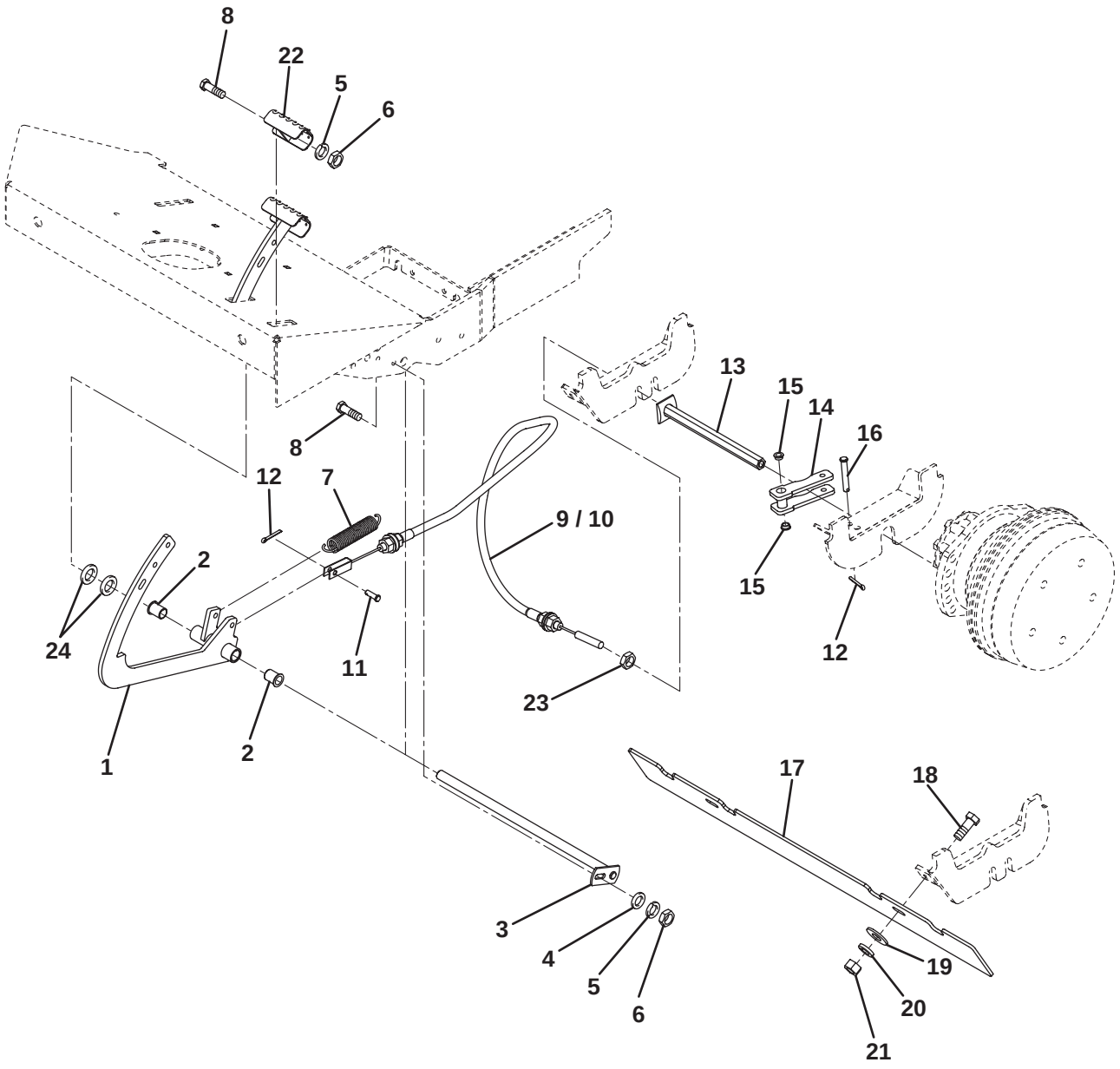
9016-08

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003244	1	Arm, Hydro Pedal	
	471214	1	• Grease Fitting (Not Shown)	
2	3010305	2	• Bushing	
3	1003071	1	Shaft	
4	400190	4	Screw, 5/16-18 x 1-1/4” Hex Head	
5	453009	1	Flat Washer, 5/16	
6	446134	3	Lockwasher, 5/16	
7	443106	3	Nut, 5/16-18 Hex	
8	1003145	1	Link, Hydro Control	
9	366974	2	Rod End	
10	443112	3	Nut, 3/8-24 Hex	
11	445785	1	Nut, 3/8-24 Hex Left Hand	
12	3006889	1	Turnbuckle	
13	3006886	1	Threaded Rod	
14	400268	1	Screw, 3/8-16 x 1-3/4” Hex Head	
15	446140	4	Lockwasher, 3/8	
16	443110	6	Nut, 3/8-16 Hex	
17	3006888	1	Pedal, Hydro	
18	3003475	2	Grip, Pedal	
19	3002695	1	Washer	
20	3007230	1	Stop, Mow Speed	
21	3007228	1	Plate, Activator	
22	3007220	1	Plate, Switch	
23	452004	2	Flat Washer, 1/4	
24	446128	4	Lockwasher, 1/4	
25	400106	2	Screw, 1/4-20 x 5/8” Hex Head	
26	333542	1	Tie Stud	
27	400266	1	Screw, 3/8-16 x 1-1/2” Hex Head	
28	400262	1	Screw, 3/8-16 x 1” Hex Head	
29	3009026	2	Angle, Switch	
30	3007392	2	Switch, Proximity	
31	403912	4	Screw, #10-24 x 5/8” Truss Head	
32	452002	4	Flat Washer, #10	
33	446118	4	Lockwasher, #10 Heavy	
34	444310	4	Nut, #10-24 Hex	
35	441606	2	Carriage Bolt, 1/4-20 x 3/4”	
36	453023	2	Flat Washer, 1/4	
37	443102	2	Nut, 1/4-20 Hex	
38	3004385	4	Seal, Rod End	
39	444718	1	Locknut, 5/16-18 Center	

> Change from previous revision

10.1 Steering Assist

Serial No. All

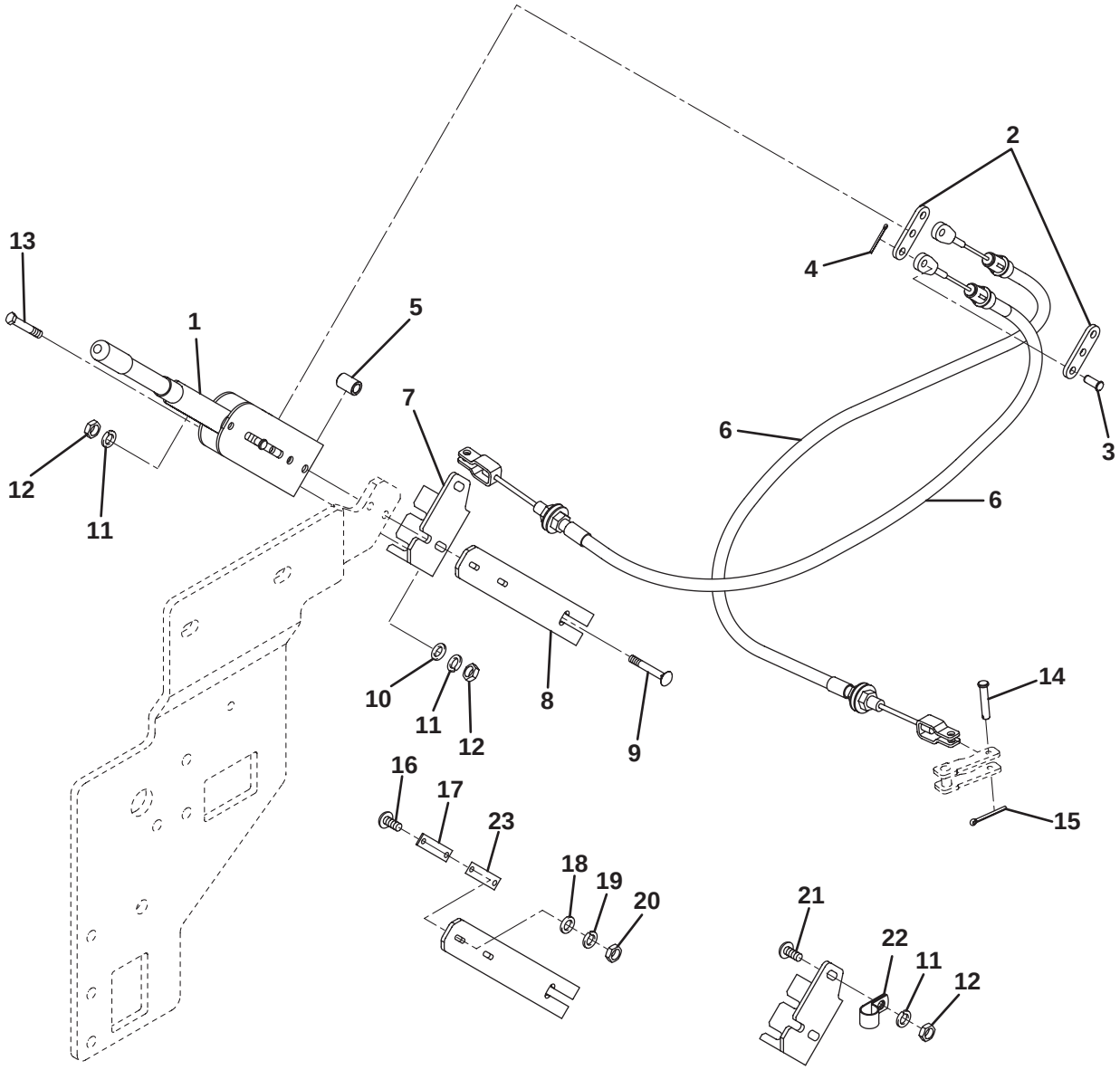


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003794	2	Steering Assist Pedal	
	471214	1	• Grease Fitting (Not Shown)	
2	3010305	4	• Bushing	
3	1003245	1	Shaft	
4	452006	1	Flat Washer, 5/16	
5	446134	3	Lockwasher, 5/16	
6	443106	3	Nut, 5/16-18Hex	
7	3006107	2	Spring, Pedal Return	
8	400188	3	Screw, 5/16-18 x 1” Hex Head	
9	3008342	1	Cable, Right Turn Assist	
10	3008343	1	Cable, Left Turn Assist	
11	461453	2	Clevis Pin, 5/16 x 1”	
12	460028	4	Cotter Pin, 1/8 x 1”	
13	1003825	2	Connector, Brake	
14	1003824	2	Pivot, Brake Lever	
15	364154	4	• Bushing	
16	3008344	2	Pin, Clevis	
17	3008907	1	Shield, Cable	
18	400262	2	Screw, 3/8-16 x 1” Hex Head	
19	452008	2	Flat Washer, 3/8	
20	446142	2	Lockwasher, 3/8 Heavy	
21	443110	2	Nut, 3/8-16 Hex	
22	1006812	2	Pad, Pedal	
23	3009607	2	Nut, M12-1.75 Hex Jam	
24	455048	2	Flat Washer, 3/4	

> Change from previous revision

11.1 Parking Brake

Serial No. All

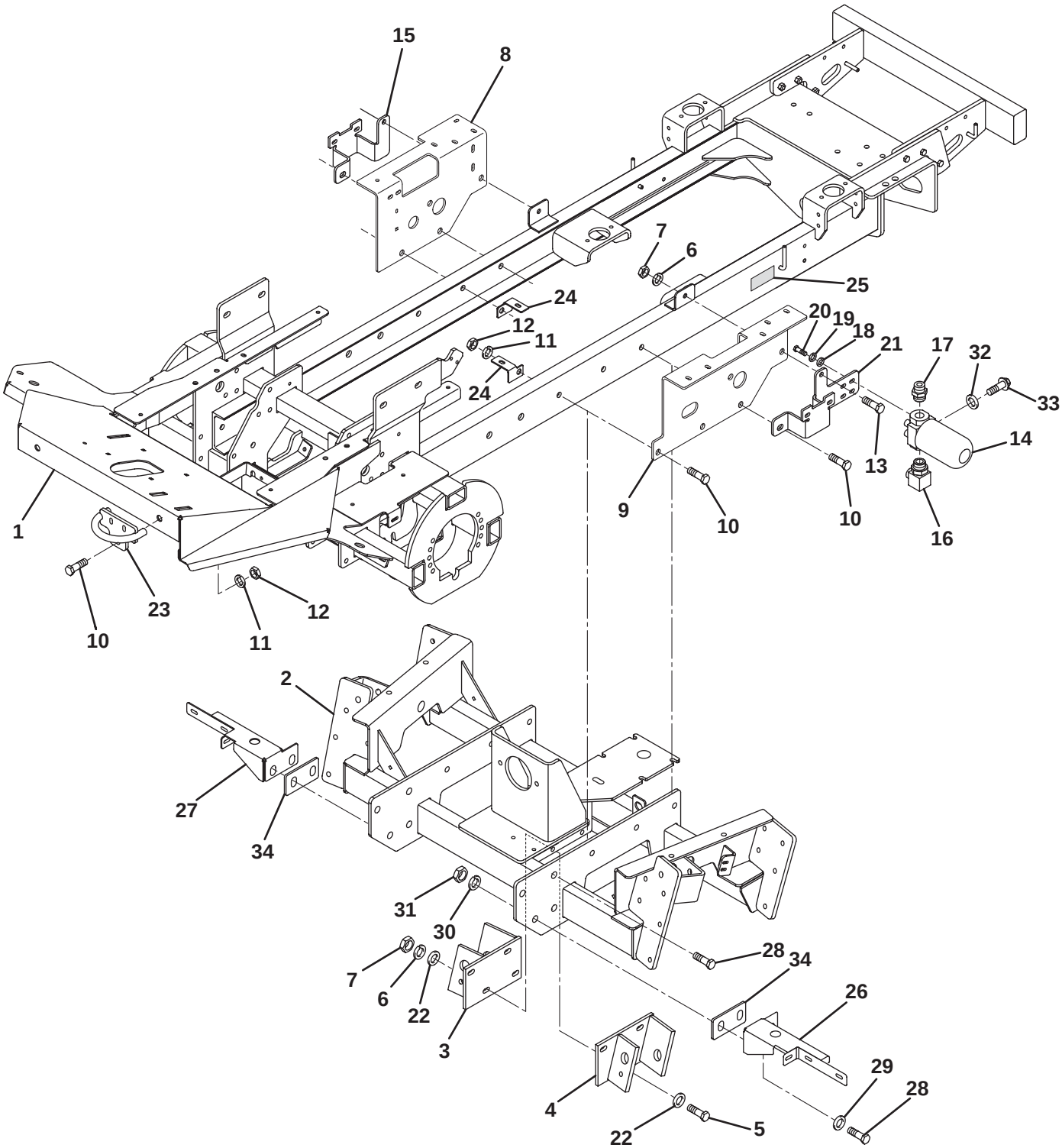


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003838	1	Parking Brake Lever	
2	N/S	2	• Stabilizer Bar	
3	545234	2	• Clevis Pin	
4	460004	2	• Cotter Pin	
5	545237	2	• Spacer	
6	3006108	2	Cable, Parking Brake	
7	3008548	1	Mount, Brake Lever	
8	3008874	1	Plate, Switch Mount	
9	441672	2	Carriage Bolt, 5/16-18 x 2-1/2”	
10	453009	2	Flat Washer, 5/16	
11	446134	4	Lockwasher, 5/16	
12	443106	5	Nut, 5/16-18 Hex	
13	400188	2	Screw, 5/16-18 x 1” Hex Head	
14	461456	2	Clevis Pin, 5/16 x 1-5/8” Hex Head	
15	460016	2	Cotter Pin, 3/32 x 1”	
16	403746	2	Screw, #10-24 x 3/4” Truss Head	
17	3007392	1	Switch, Proximity	
18	452002	2	Flat Washer, #10	
19	446118	2	Lockwasher, #10 Heavy	
20	444310	2	Nut, #10-24 Hex	
21	441602	1	Carriage Bolt, 5/16-18 x 3/4”	
22	354081	1	Clamp, Wire Harness	
23	3009193	5	Shim, Switch	

> Change from previous revision

12.1 Frame

Serial No. 70528 All
Serial No. 70530 All



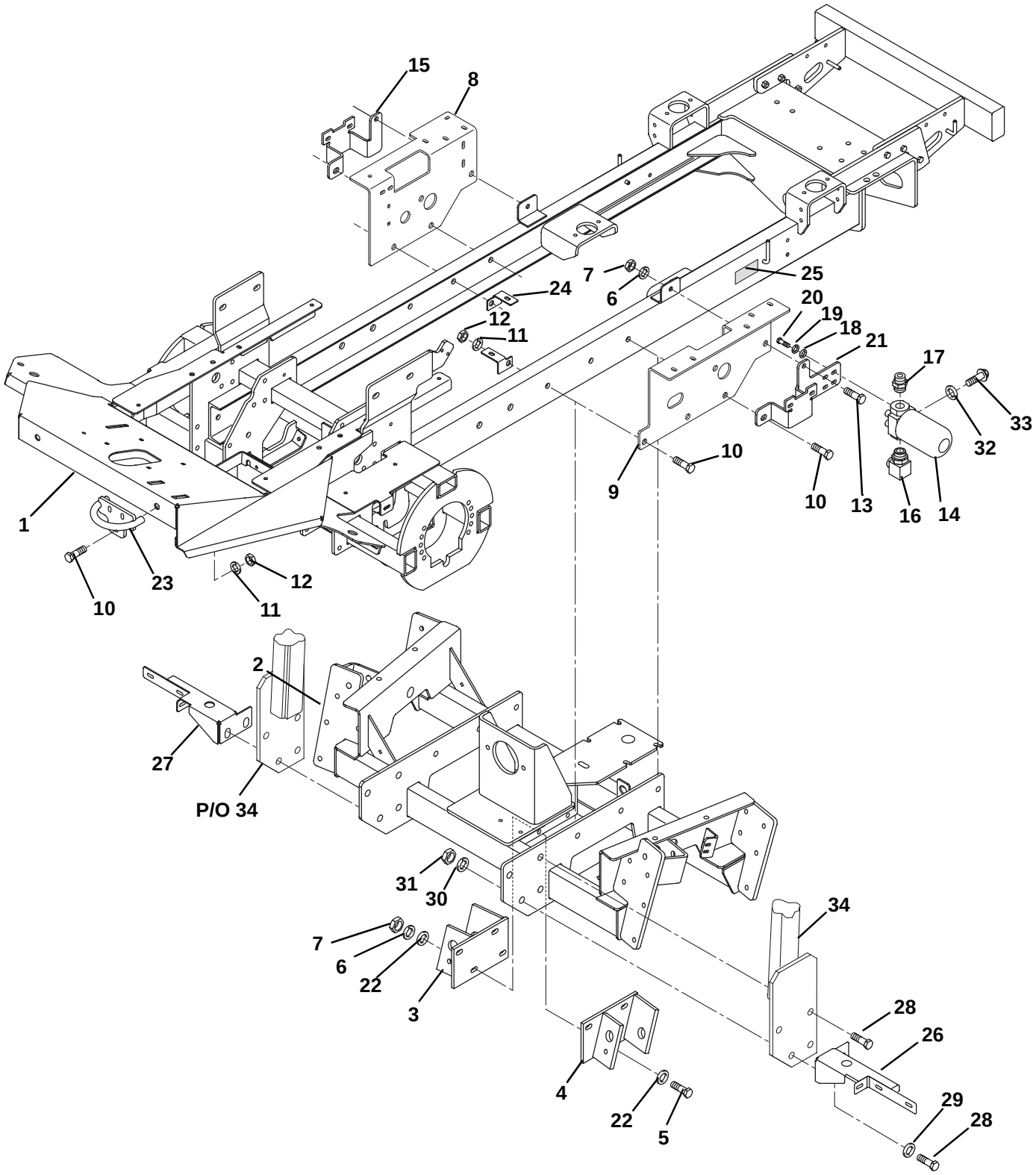
9016-02

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4131870	1	Frame	
2	1002889	1	Cross Frame	
3	1002895	1	Cylinder Mount, Right	
4	1002896	1	Cylinder Mount, Left	
5	400416	4	Screw, 1/2-13 x 2-1/2” Hex Head	
6	446154	6	Lockwasher, 1/2 Heavy	
7	443118	6	Nut, 1/2-13 Hex	
8	3006814	1	Bracket, Right Radiator	
9	3006815	1	Bracket, Left Radiator	
10	400616	8	Screw, 5/8-11 x 2” Hex Head	
11	446166	8	Lockwasher, 5/8 Heavy	
12	443126	8	Nut, 5/8-11 Hex Head	
13	400406	2	Screw, 1/2-13 x 1-1/4” Hex Head	
14	1004938	1	Charge Filter Assembly	
	556417	1	• Head	
	5003691	1	• Oil Filter Cartridge	
	556419	1	• Charge Pressure Switch	**REFERENCE SW15, See 68.1**
15	3007919	1	Bracket, Valve Mounting	
16	340075	1	Adapter, 90°	
17	339996	1	Adapter, Straight	
18	452008	4	Flat Washer, 3/8	
19	446140	4	Lockwasher, 3/8	
20	400260	4	Screw, 3/8-16 x 7/8” Hex Head	
21	3007920	1	Bracket, Deck Valve Mounting	
22	453017	8	Flat Washer, 1/2	
23	1004691	2	Tie Down	
24	3009197	2	Bracket, Hose	
25	REF	1	Plate, Serial Number	
26	1004308	1	Mount, Fuel Tank Rear	
27	1004309	1	Mount, Hydraulic Tank Rear	
28	400778	8	Screw, 3/4-10 x 2-1/2” Hex Head	
29	452018	4	Flat Washer, 3/4	
30	446178	8	Lockwasher, 3/4 Heavy	
31	443130	8	Nut, 3/4-10 Heavy	
32	453004	1	Flat Washer, #8	
33	409701	1	Screw, #8-18 x 3/8” Thread Form	
34	3010035	2	Plate	

> Change from previous revision

13.1 Frame With ROPS

Serial No. 70529 All



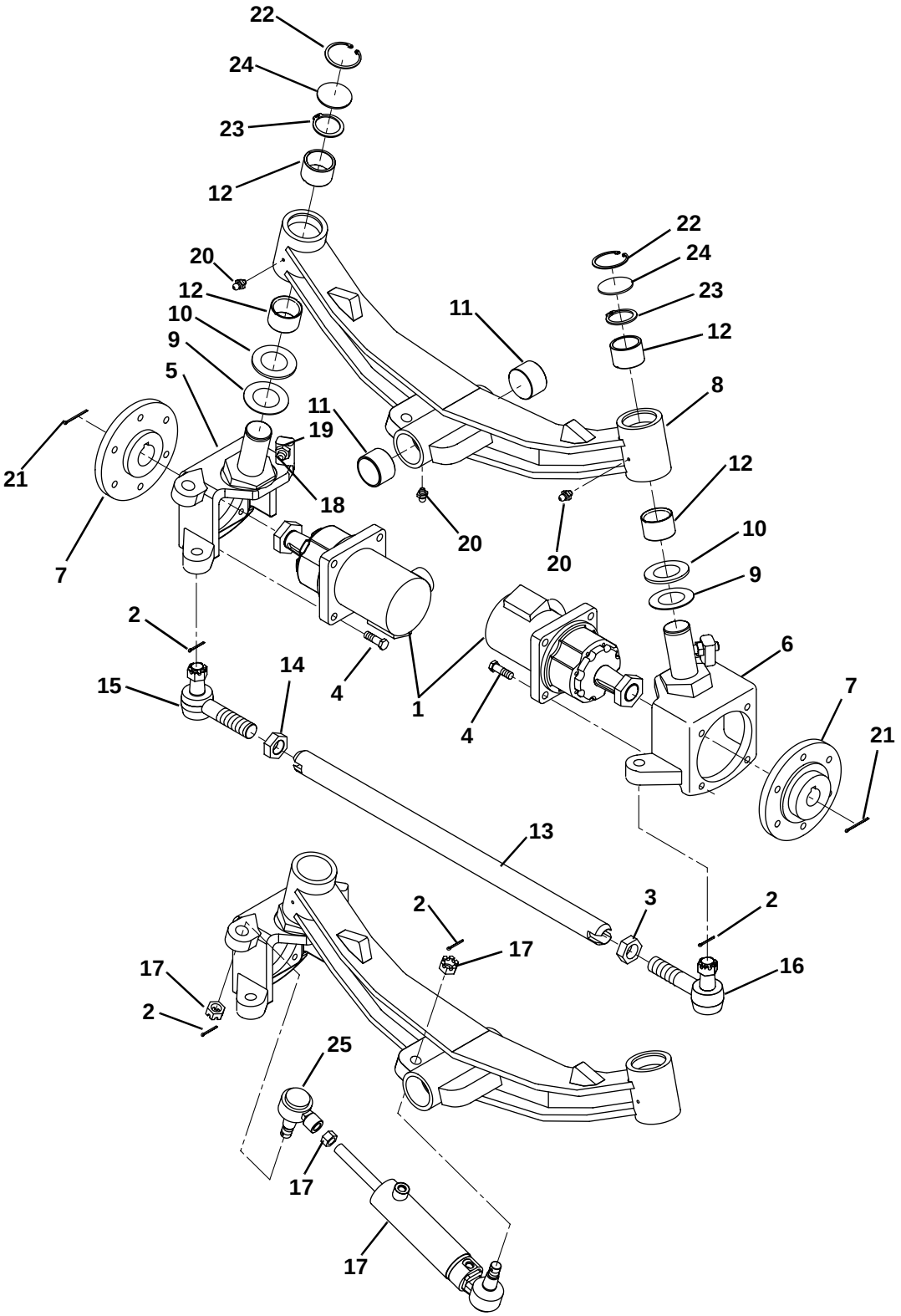
9016-02

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4131870	1	Frame	
2	1002889	1	Cross Frame	
3	1002895	1	Cylinder Mount, Right	
4	1002896	1	Cylinder Mount, Left	
5	400416	4	Screw, 1/2-13 x 2-1/2” Hex Head	
6	446154	6	Lockwasher, 1/2 Heavy	
7	443118	6	Nut, 1/2-13 Hex	
8	3006814	1	Bracket, Right Radiator	
9	3006815	1	Bracket, Left Radiator	
10	400616	8	Screw, 5/8-11 x 2” Hex Head	
11	446166	8	Lockwasher, 5/8 Heavy	
12	443126	8	Nut, 5/8-11 Hex Head	
13	400406	2	Screw, 1/2-13 x 1-1/4” Hex Head	
14	1004938	1	Charge Filter Assembly	
	556417	1	• Head	
	5003691	1	• Oil Filter Cartridge	
	556419	1	• Charge Pressure Switch	**REFERENCE SW15, See 68.1**
15	3007919	1	Bracket, Valve Mounting	
16	340075	1	Adapter, 90°	
17	339996	1	Adapter, Straight	
18	452008	4	Flat Washer, 3/8	
19	446140	4	Lockwasher, 3/8	
20	400260	4	Screw, 3/8-16 x 7/8” Hex Head	
21	3007920	1	Bracket, Deck Valve Mounting	
22	453017	8	Flat Washer, 1/2	
23	1004691	2	Tie Down	
24	3009197	2	Bracket, Hose	
25	REF	1	Plate, Serial Number	
26	1004308	1	Mount, Fuel Tank Rear	
27	1004309	1	Mount, Hydraulic Tank Rear	
28	400778	8	Screw, 3/4-10 x 2-1/2” Hex Head	
29	452018	4	Flat Washer, 3/4	
30	446178	8	Lockwasher, 3/4 Heavy	
31	443130	8	Nut, 3/4-10 Heavy	
32	453004	1	Flat Washer, #8	
33	409701	1	Screw, #8-18 x 3/8” Thread Form	
34	1002893	1	ROPS	Includes Decals and Seat Belt

> Change from previous revision

14.1 Steering Axle

Serial No. All

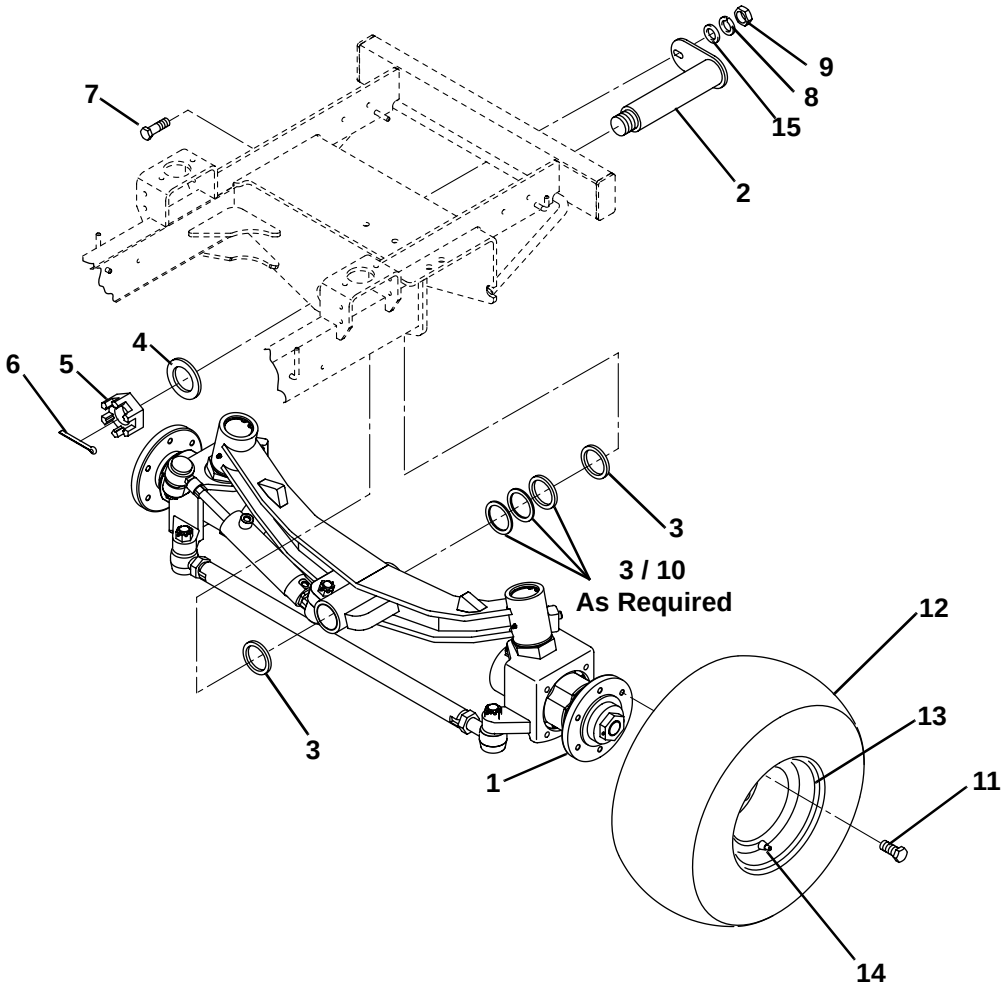


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5003540	2	Wheel Motor	**See 50.1**
2	460030	4	Cotter Pin, 1/8 x 1-1/4”	
3	443842	1	Nut, 1-1/8 -12 Hex Jam	
4	401208	8	Screw, 1/2-13 x 1-3/4” Grade 8	
5	5003530	1	Frame, RH Wheel Motor	
6	5003529	1	Frame, LH Wheel Motor	
7	5003521	2	Hub, Wheel	
8	5003526	1	Axle, Center Section	
9	5003518	2	Washer, Thrust	
10	5003515	2	Washer, Thrust	
11	5003528	2	Bushing, Bronze	
12	5003527	4	Bushing, Bronze	
13	5003522	1	Tie Rod	
14	5003519	1	Nut, 1-1/8 -12 Left Hand Thread	
15	5003523	1	Tie Rod End, Left Hand Thread	
16	5003524	1	Tie Rod End, Right Hand Thread	
17	5003541	1	Cylinder, Steering	**See 49.1**
	5003542	1	• Seal Kit	
18	5003562	2	Screw, 5/8-11 Socket Head Set	
19	443826	2	Nut, 5/8-11 Hex Jam	
20	471214	3	Grease Fitting	
21	460035	2	Cotter Pin, 1/8 x 2”	
22	458126	2	Snap Ring	
23	5003520	2	Snap RIng, External	
24	5003531	2	Plug, Expansion	
25	5003543	1	Socket Assembly	

> Change from previous revision

15.1 Steering Axle Installation

Serial No. All

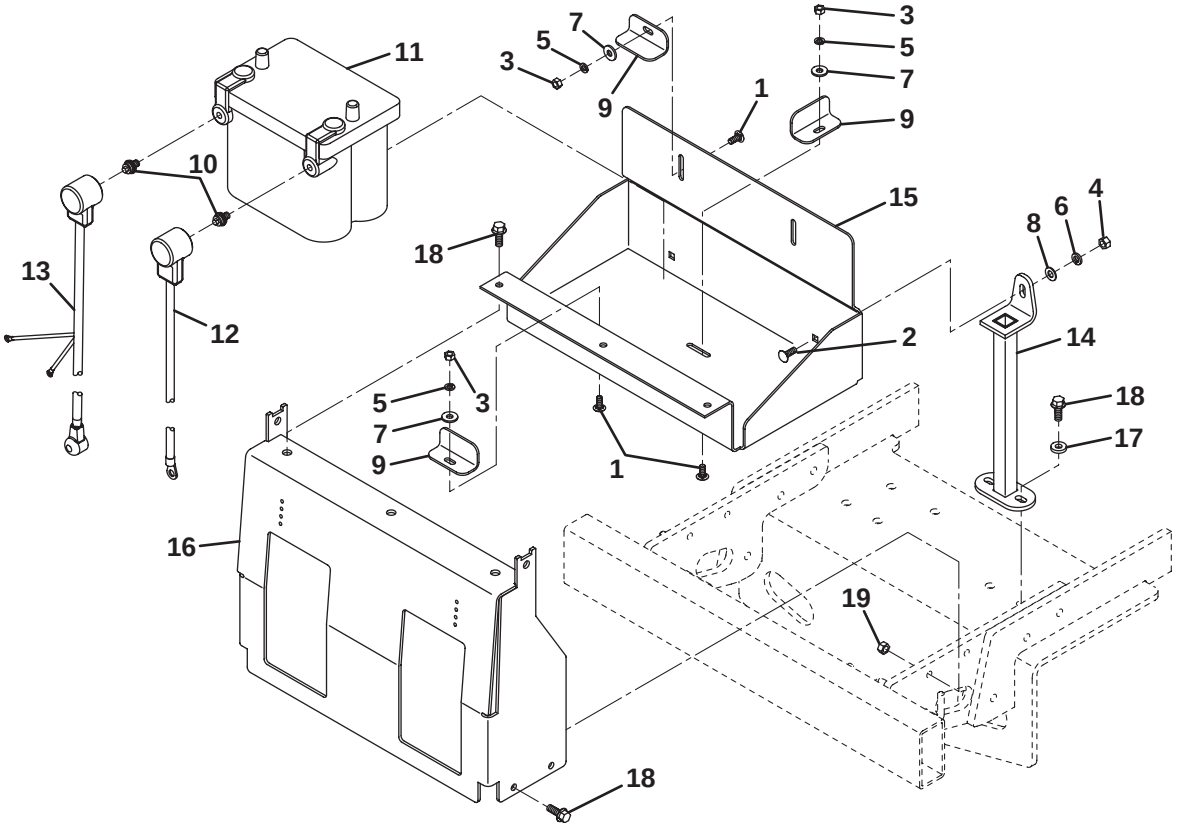


9016-36

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	–	1	Steering Axle	**See 14.1**
2	1003001	1	Pivot Shaft	
3	3006475	AR	Washer, 3/32” Thick Thrust	
4	363766	1	Washer	
5	445642	1	Nut, 1-1/2 -12 Slotted Hex	
6	460072	1	Cotter Pin, 1/4 x 2-1/2”	
7	400408	1	Screw, 1/2-13 x 1-1/2” Hex Head	
8	446152	1	Lockwasher, 1/2	
9	443118	1	Nut, 1/2-13 Hex	
10	3003101	AR	Washer, 1/32” Thick Thrust	
11	3007683	12	Wheel Bolt, 1/2-20	
12	5003419	2	Tire, 24 x 12-12 Turf Trac	
13	5003420	2	Wheel	
14	360111	2	Valve, Inflation	
15	453017	1	Flat Washer, 1/2	

> Change from previous revision

16.1 Battery Tray

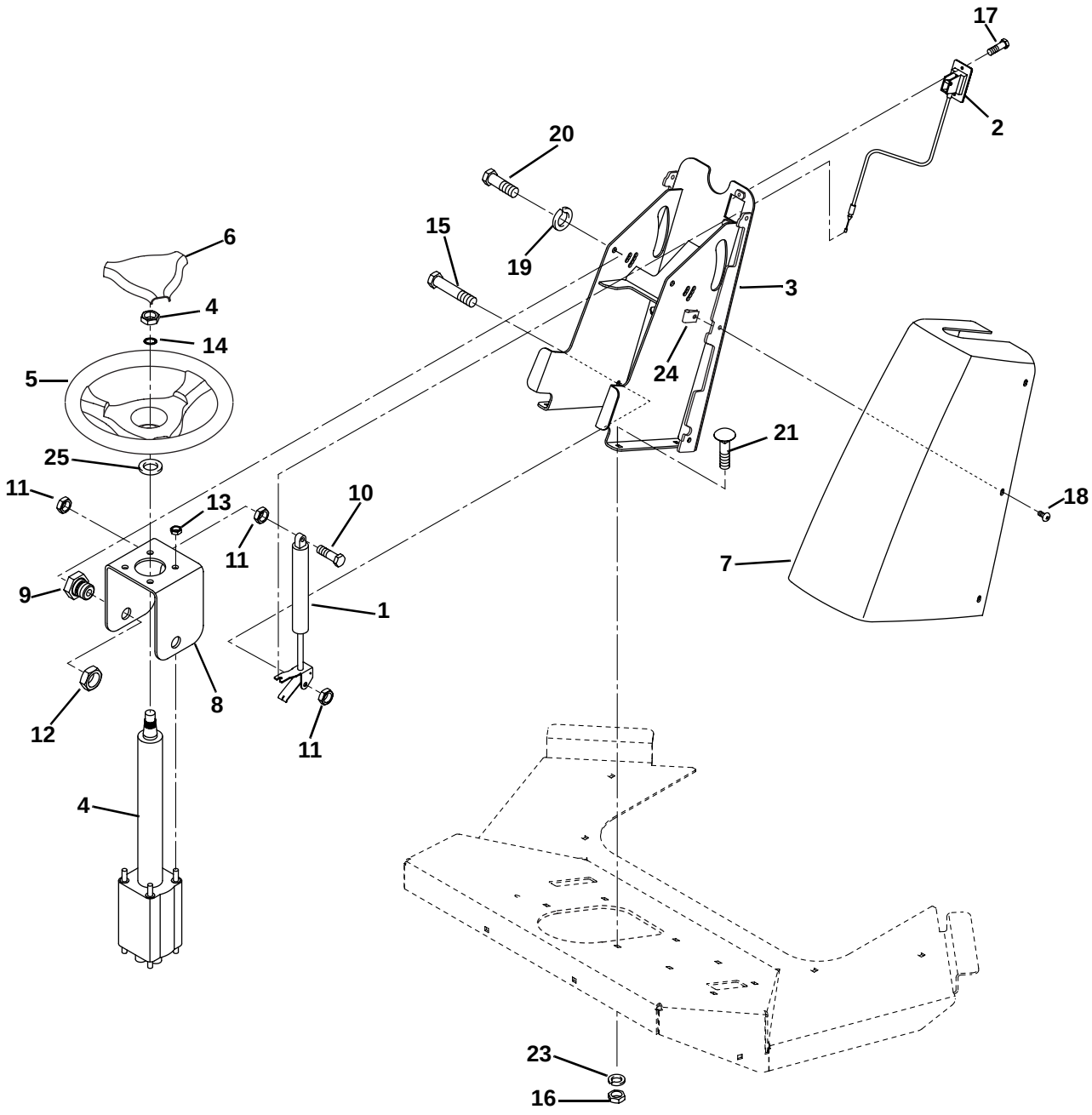


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	440078	3	Bolt, Carriage 5/16-18 x 3/4”	
2	440118	2	Bolt, Carriage 3/8-16 x 1”	
3	443106	3	Nut, 5/16-18 Hex	
4	443109	2	Nut, 3/8-16 Hex	
5	446134	3	Lockwasher, 5/16	
6	446142	2	Lockwasher, 3/8 Heavy	
7	452006	3	Flat Washer, 5/16	
8	453011	2	Flat Washer, 3/8	
9	3008461	3	Angle, Battery Clamp	
10	3010346	2	Terminal Bolt, Side	
11	4108140	1	Battery	**REFERENCE B1, See 68.1**
12	4133043	1	Cable, Negative Battery	
13	4133044	1	Cable, Positive Battery	
14	4133224	2	Support, Weldment	
15	4136131	1	Tray, Battery	
16	4136563	1	Support Bracket, Hood Rear Assy	
17	64163-46	4	Washer, .388 x .880	
18	800709	11	Bolt, Flange Head 3/8-16 x 1-1/4:	
19	444762	4	Locknut, 3/8-16 Center	

> Change from previous revision

17.1 Tilt Steering

Serial No. All

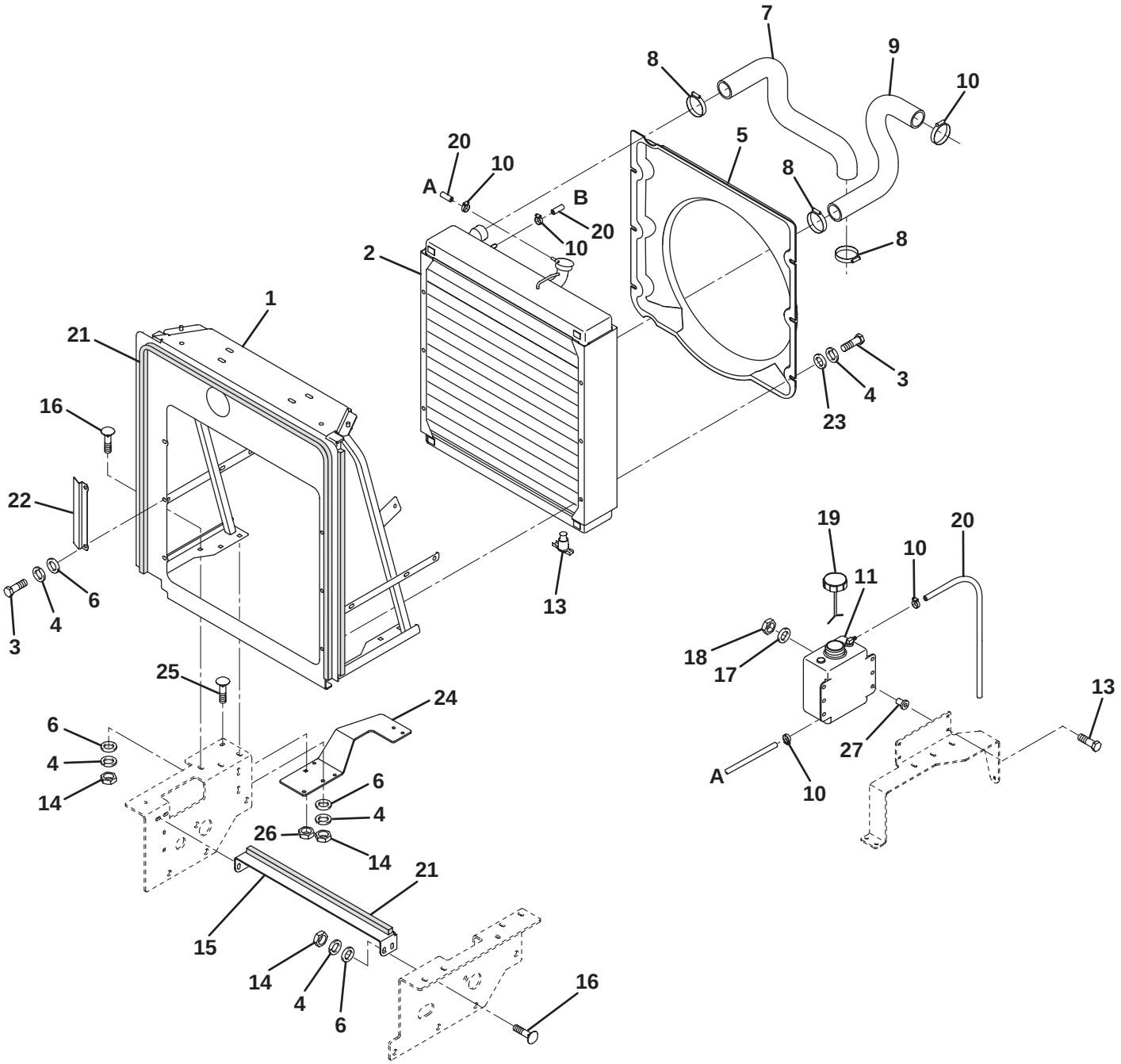


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5002918	1	Actuator, Gas Spring	
2	5002919	1	Cable, Actuator	
3	2811346	1	Tower, Steering	
4	1002800	1	Pump, Steering	See 46.1
	339979	5	• Adapter, Straight	
5	2811364	1	Steering Wheel	
6	2811365	1	• Cap, Steering Wheel	
7	3010651	1	Cover, Steering Tower	
8	3005981	1	Bracket, Steering Pump	
9	3005934	2	Bolt, Shoulder	
10	400192	1	Screw, 5/16-18 x 1-1/2” Hex Head	
11	444718	3	Locknut, 5/16-18 Center	
12	444849	2	Locknut, 3/4-10 Center Jam	
13	444754	4	Locknut, 5/16-24 Center	
14	447224	1	Lockwasher, 5/8 Internal	
15	400216	1	Screw, 5/16-18 x 2-3/4” Hex Head	
16	443106	4	Nut, 5/16-18 Hex	
17	416911	2	Screw, #10-24 x 1/2” Thread Cutting	
18	404016	6	Screw, 1/4-20 x 5/8: Truss Head	
19	446142	2	Lockwasher, 3/8 Heavy	
20	400258	2	Screw, 3/8-16 x 3/4” Hex Head	
21	441602	4	Carriage Bolt, 5/16-18 x 3/4”	
22				
23	446136	4	Lockwasher, 5/16 Heavy	
24	445245	6	Tinnerman Nut	
25	2811547	1	Washer	

> Change from previous revision

Serial No. All

18.1 Radiator

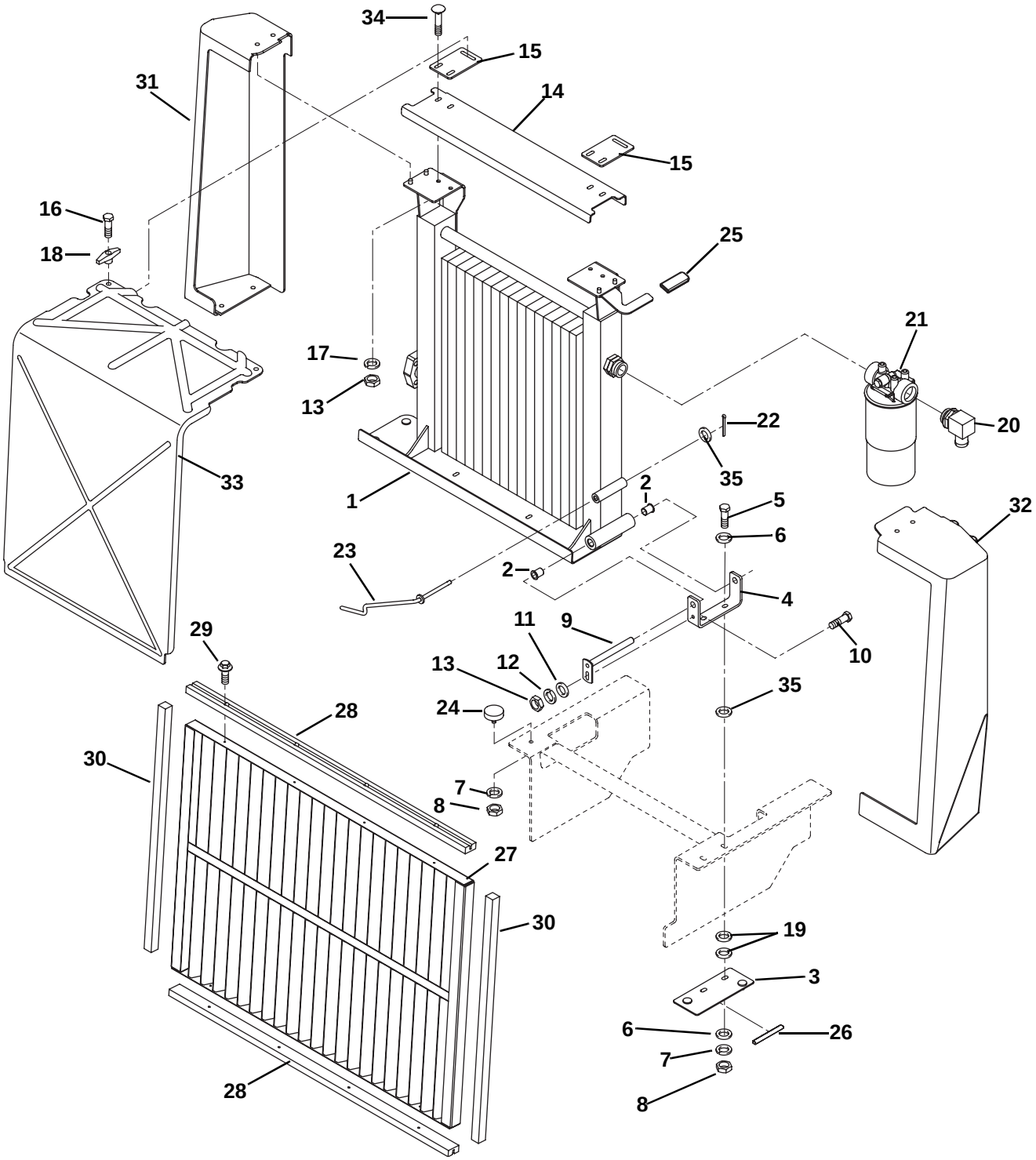


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003075	1	Radiator Firewall	
2	1002953	1	Radiator	
	555867	1	• Radiator Cap	
3	400258	12	Screw, 3/8-16 x 3/4” Hex Head	
4	446142	22	Lockwasher, 3/8 Heavy	
5	4132213	1	Radiator Fan Shroud	
6	452008	10	Flat Washer, 3/8	
7	4132168	1	Hose, Upper Radiator	
8	326799	4	Clamp, Hose	
9	4132169	1	Hose, Lower Radiator	
10	366526	4	Clamp, Hose	
11	3007731	1	Reserve Tank	
12	162479	1	Drain Cock	
13	440086	4	Carriage Bolt, 5/16-18 x 1-1/2”	
14	443110	10	Nut, 3/8-16 Hex	
15	3008885	1	Brace, Cooler	
16	440120	10	Carriage Bolt, 3/8-16 x 1-1/4”	
17	453009	4	Flat Washer, 5/16	
18	444718	4	Locknut, 5/16-18 Center	
19	3009537	1	Cap, Reserve Tank	
20	554748	AR	Hose, 5/16 I.D.	
21	3008203	AR	Seal (10 Foot Roll)	
22	2810492	1	Plate, Indent	
23	3006233	6	Washer, Isolator	
24	4136512	1	Bracket, Remote Engine Oil Filter	
25	440080	1	Carriage Bolt, 5/16-18 x 3/4”	
26	445781	1	Nut, 5/16-18 Whiz Lock	
27	831846	4	Nut, Isolation	

> Change from previous revision

19.1 Oil Cooler

Serial No. All



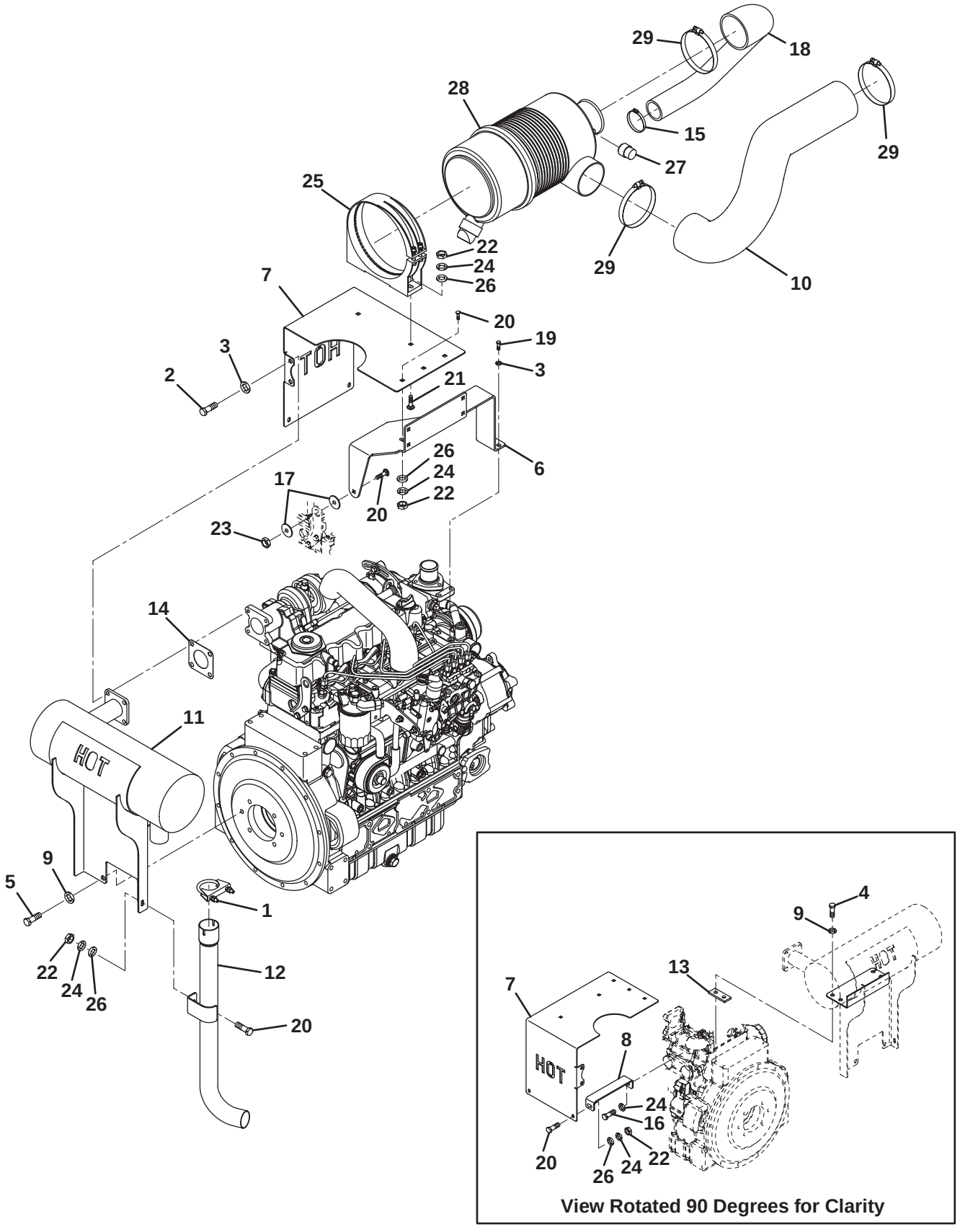
9016-13

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1002952	1	Oil Cooler	
2	3004113	2	Bushing	
3	2810633	1	Plate, Cap Mounting	
4	3007011	1	Bracket, Cooler Pivot	
5	400270	2	Screw, 3/8-16 x 2” Hex Head	
6	452008	4	Flat Washer, 3/8	
7	446142	3	Lockwasher, 3/8 Heavy	
8	443110	3	Nut, 3/8-16 Hex	
9	1004028	1	Pin, Cooler Pivot	
10	400186	1	Screw, 5/16-18 x 7/8” Hex Head	
11	452006	1	Flat Washer, 5/16	
12	446134	1	Lockwasher, 5/16	
13	443106	5	Nut, 5/16-18 Hex	
14	3008562	1	Angle, Cooler Top	
15	3008563	2	Plate, Cooler Lock	
16	400190	2	Screw, 5/16-18 x 1-1/4” Hex Head	
17	446136	4	Lockwasher, 5/16 Heavy	
18	362008	2	Knob	
19	358794	4	Washer	
20	3007674	1	Fitting, 90°	
21	1003011	1	Return Filter	
	5002693	1	• Return Filter Cartridge	
	556419	1	• Switch	
22	460016	1	Cotter Pin, 3/32 x 1”	
23	1004172	1	Stand, Cooler Pivot	
24	361723	1	Stop, Rubber	
25	351491	1	Grip	
26	551651	AR	Molding	
27	1003942	1	Screen	
28	3008561	2	Guide, Screen	
29	409804	8	Screw, #10-24 x 1/2” Thread Cut	
30	3009095	2	Seal, Neoprene	
31	3008554	1	Cap, Right Side	
32	2810634	1	Cap, Left Side	
33	3010014	1	Shield, Screen	
34	440082	4	Carriage Bolt, 5/16-18 x 1”	
35	453011	3	Flat Washer, 3/8	

> Change from previous revision

20.1 Air Cleaner and Muffler

Serial No. All



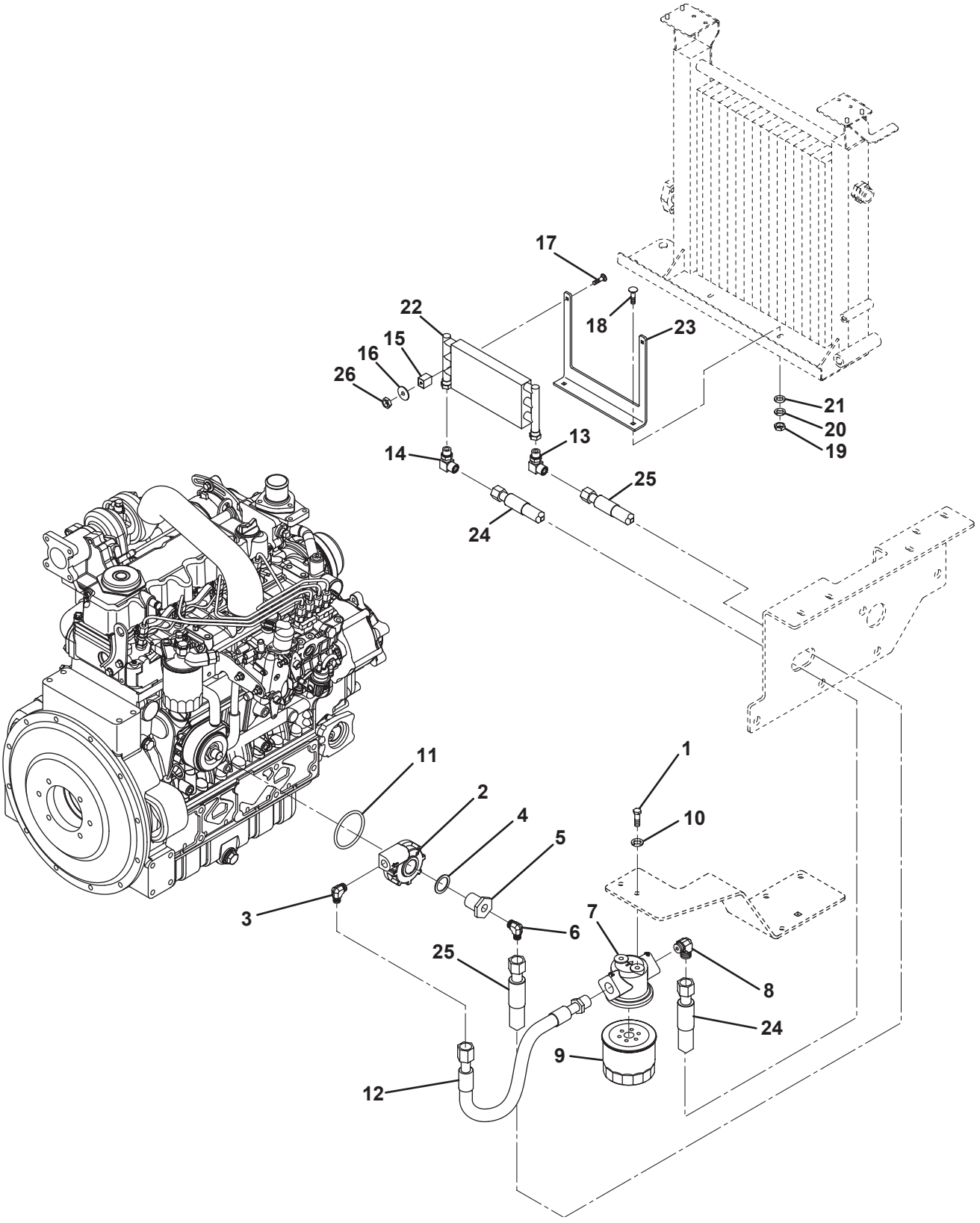
9016-16

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	162236	1	Clamp	
2	3002042	4	Screw, M10-1.25 x 22 SHCS	
3	363485	6	Lockwasher, M10 Heavy	
4	365979	4	Bolt, M12-1.25 x 25	
5	400404	2	Screw, 1/2-13 X 1” Hex Head	
6	4135602	1	Bracket, Support	
7	4135603	1	Bracket, Air Filter/Heat Shield	
8	4136469	2	Bracket, Heat Shield	
9	446154	6	Lockwasher, 1/2 Heavy	
10	4132212	1	Hose, Air Intake	
11	4132214	1	Muffler, Weldment Assembly	
12	4132420	1	Tailpipe Assembly	
13	4136616	2	Isolator, Muffler	
14	4135922	1	Gasket, Exhaust Flange	
15	359615	1	Clamp, Hose	
16	361898	2	Screw, M8-1.25 x 16MM	
17	362615	2	Flat Washer	
18	4132211	1	Hose, Turbo Filter Assembly	
19	366884	2	Bolt, M10-1.25 x 20 Hex Head	
20	440082	9	Bolt, Carriage 5/16-18 x 1”	
21	440084	2	Carriage BOlt, 5/16-18 x 1-1/4”	
22	443106	8	Nut, 5/16-18 Hex	
23	444718	1	Locknut, 5/16-18 Center	
24	446136	8	Lockwasher, 5/16 Heavy	
25	3009505	1	Clamp, Air Cleaner Mount	
26	453009	8	Flat Washer, 5/16	
27	1001752	1	Indicator, Mini Kit	
28	1004417	1	Air Cleaner Assembly	
29	813689	3	Clamp, Hose	

> Change from previous revision

21.1 Remote Engine Oil Filter

Serial No. All



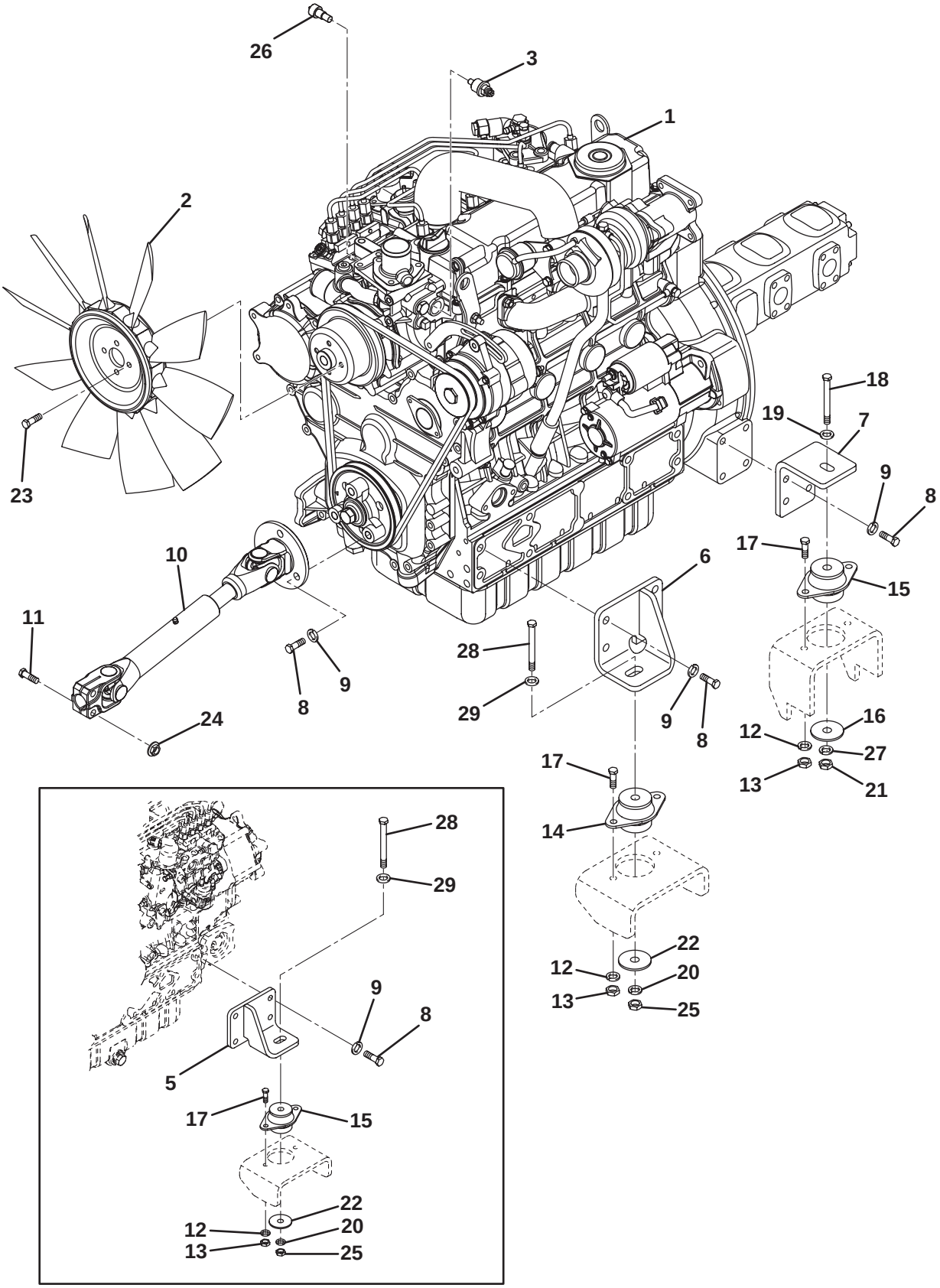
9016-13

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	450190	2	Screw, M8-1.25 x 16 Hex Head	
2	4136120	1	Adaptor, Oil Filter	Part of Engine
3	4137099	1	Adaptor, 90°, 3/8-18 x 13/16	
4	4133242	1	O Ring	Part of Engine
5	4133240	1	Plug, Oil Filter	Part of Engine
6	4137101	1	Adaptor, 90° 3/8-18 x 11/16	
7	4133243	1	Cover, Oil Filter	Part of Engine
8	4137100	1	Adaptor, 90° 1/2 x 13/16	
9	4137894	1	Filter	Part of Engine
10	446136	2	Lockwasher, 5/16 Heavy	
11	4133241	1	O Ring	Part of Engine
12	4135261	1	Hose, Pump Right Side Tube	
13	340063	1	Elbow, 90°	
14	340070	1	Elbow, 90°	
15	4137611	2	Mounting Block, Rubber	
16	367559	2	Washer, Oil Cooler Mounting	
17	441618	2	Bolt, Carriage 5/16-18 x 2”	
18	440118	2	Bolt, Carriage 3/8-16 x 7/8”	
19	443110	2	Nut, 3/8-16 Hex	
20	446142	2	Lockwasher, 3/8	
21	452008	2	Flat Washer, 3/8	
22	3009860	1	Cooler, 3 Row	
23	4135761	1	Bracket, Engine Oil Cooler	
24	4136646	1	Hose Assembly, Inlet	
25	4136647	1	Hose Assembly, Return	
26	444718	2	Locknut, 5/16-18 Center	

> Change from previous revision

22.1 Engine Mounting

Serial No. All



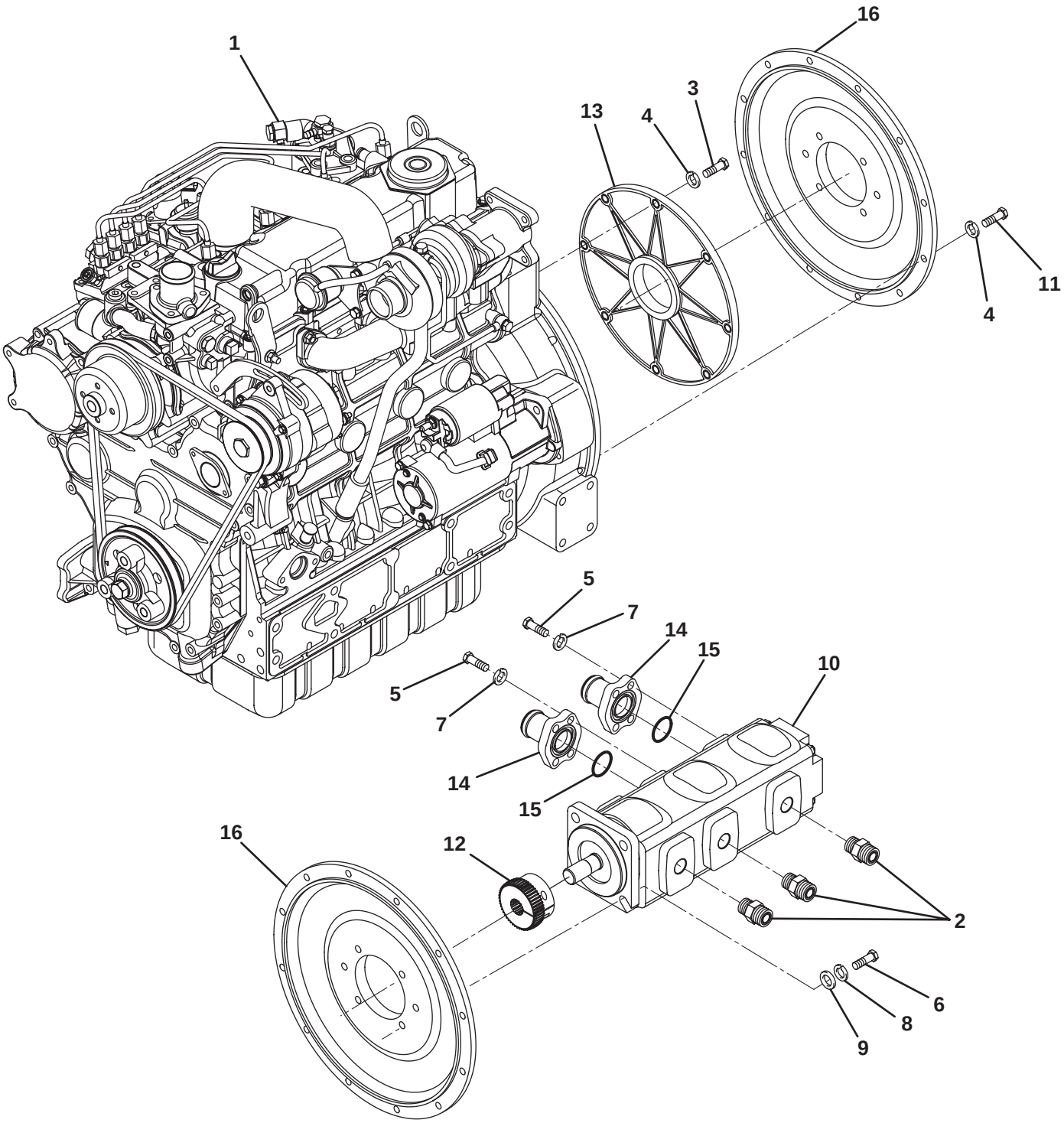
9016-11

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	–	1	Engine and Pump Assembly	**See 22.1**
2	4136298	1	Fan	Mounting Hardware Part of Engine
3	3008821	1	Temperature Sender	**REFERENCE U6, See 68.1**
4				
5	4136286	1	Engine Mount, Right Hand	
6	4136285	1	Engine Mount, Left Hand	
7	4132013	2	Engine Mount, Rear	
8	365979	19	Screw, M12-1.25 x 25mm Hex Head	
9	446154	19	Lockwasher, 1/2 Heavy	
10	4134448	1	Drive Shaft	
11	400266	2	Screw, 3/8-16 x 1-1/2” Hex Head	
12	446142	8	Lockwasher, 3/8 Heavy	
13	443110	8	Nut, 3/8-16 Hex	
14	4137616	2	Isolator, Rear	
15	4136227	2	Isolator, Front	
16	323943	2	Washer, 2”O.D. x 17/32” I.D.	
17	400264	8	Screw, 3/8-16 x 1-1/4” Hex Head	
18	400422	2	Screw, 1/2-13 x 4” Hex Head	
19	452012	2	Flat Washer, 1/2	
20	446166	2	Lockwasher, 5/8” Heavy	
21	443118	2	Nut, 1/2-13 Hex	
22	361071	2	Flat Washer, Isolator	
23	4136245	4	Screw, M8-1.25 x 50mm Hex Flange	
24	444762	2	Locknut, 3/8-16 Center	
25	443128	2	Nut, 5/8-18 Hex	
26	363996	1	Switch, Temperature Warning	**REFERENCE SW17, See 68.1**
27	446154	2	Lockwasher, 1/2” Heavy	
28	400656	2	Screw, 5/8-18 x 4” Hex Head	
29	452016	2	Flat Washer, 5/8	

> Change from previous revision

23.1 Engine and Pump Assembly

Serial No. All



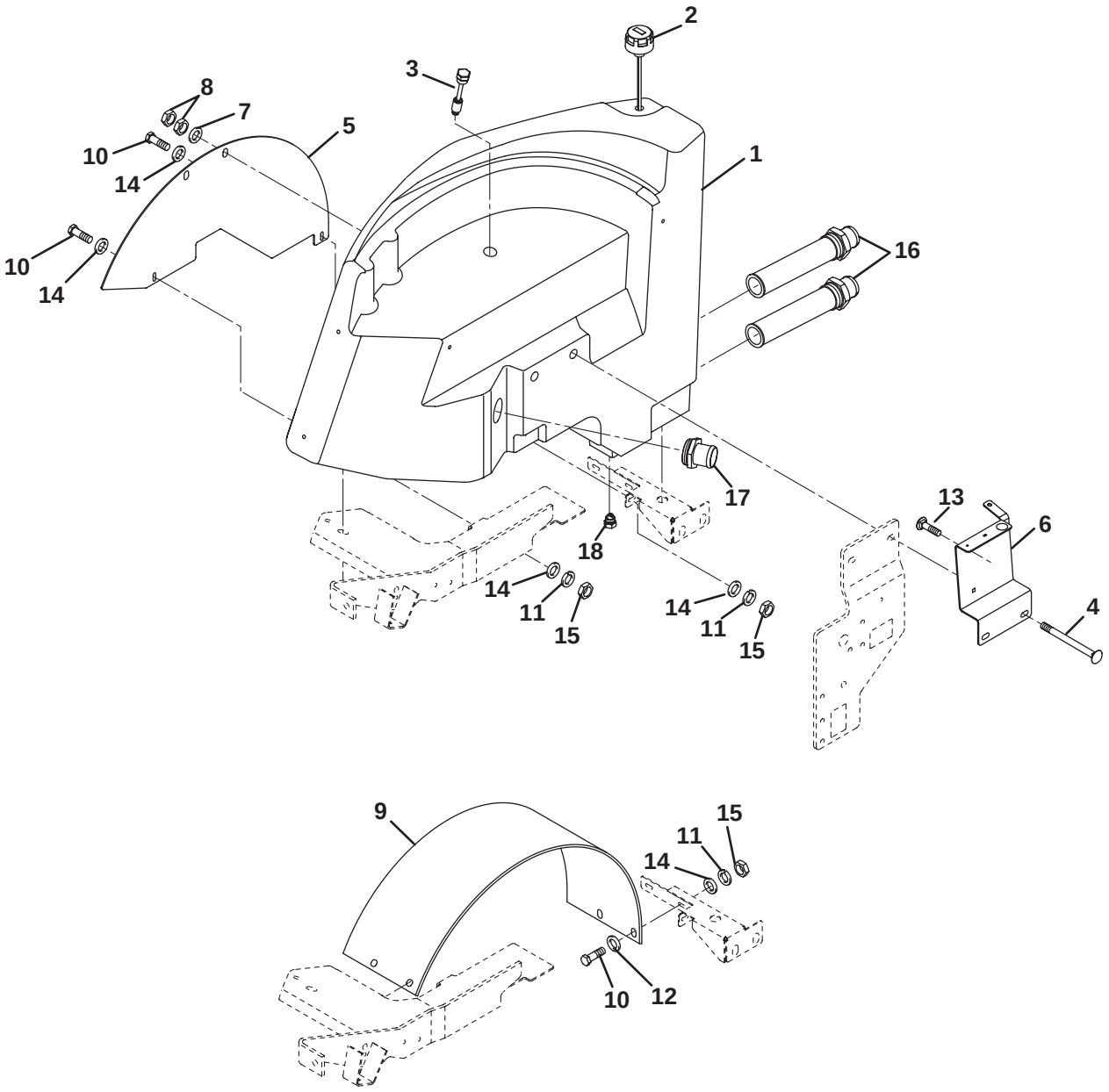
9016-10

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	REF	1	Kubota Engine Assembly	
		1	• Engine Oil Filter	
		1	• Fan Belt	
		1	• Fuel Filter	
2	339989	3	Connector, Straight Thread	
3	362263	8	Bolt, M10-1.25 X 25 Hex Head	
4	363485	20	Lockwasher, M10 Heavy	
5	400336	8	Screw, 7/16-14 X 1-1/4” Hex Head	
6	400406	4	Screw, 1/2-13 X 1-1/4” Hex head	
7	446148	8	Lockwasher, 7/16 Heavy	
8	446154	4	Lockwasher, 1/2 Heavy	
9	453017	4	Flat Washer, 1/2	
10	1003247	1	Pump, Triple	
	5003163	1	• Seal Kit, Front Section	
	5003164	1	• Seal Kit, Section	One kit required for each section
11	3002042	12	Bolt, M10-1.25 X 22 Socket Head	
12	3006238	1	Hub	
13	3006240	1	Flange, 10”	
14	3006829	2	Fitting, 4-Bolt Flange	
15	3006835	2	O-Ring, 1.750 O.D. X 1.500 I.D.	
16	4132016	1	Flywheel Cover, Rear	

> Change from previous revision

Serial No. All

24.1 Tank Mounting

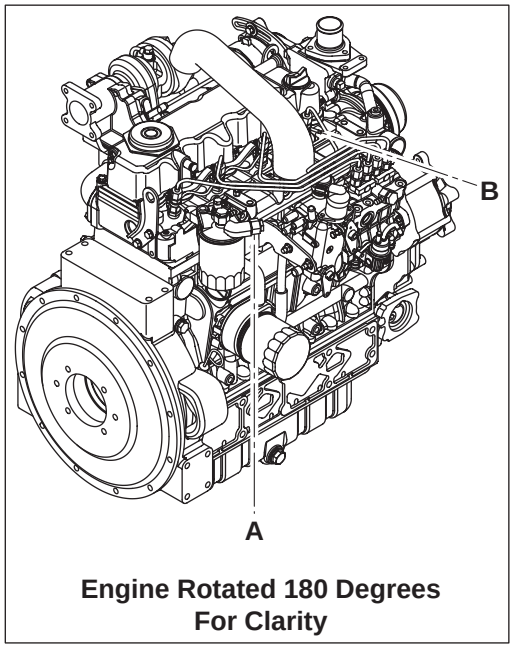


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3006264	1	Tank, Hydraulic oil	
2	3008808	1	Cap, Breather Filler	
3	3009203	1	Sensor, Oil Level	**REFERENCE SW11, See 68.1**
4	441689	2	Carriage Bolt, 1/2-13 x 8-1/2”	
5	3009236	1	Wall, Fender	
6	3008219	1	Bracket, Hose Retainer	
7	452012	2	Flat Washer, 1/2	
8	443118	4	Nut, 1/2-13 Hex	
9	3009980	1	Fender, Right Side	
10	400188	6	Screw, 5/16-18 x 1” Hex Head	
11	446136	6	Lockwasher, 5/16 Heavy	
12	362615	8	Washer, Special	
13	440088	2	Carriage Bolt, 5/16-18 x 1-3/4”	
14	452006	8	Flat Washer, 5/16	
15	443106	6	Nut, 5/16-18 Hex	
16	3006566	2	Strainer	
	339904	2	• O-Ring SAE -32	
17	3006847	1	Fitting, Beaded	
	339904	1	• O-Ring SAE -32	
18	3002397	1	Plug, Magnetic	

> Change from previous revision

25.1 Fuel Tank

Serial No. All



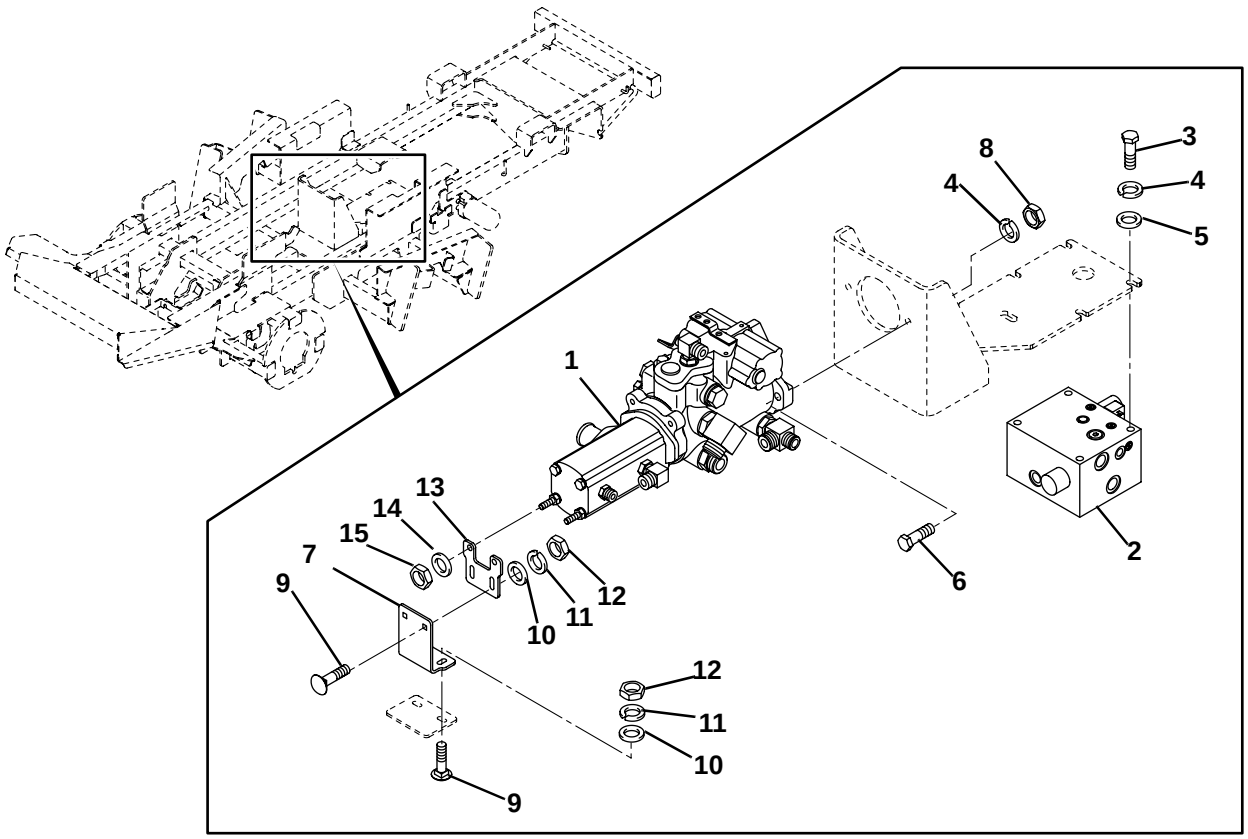
Engine Rotated 180 Degrees For Clarity

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	554752	1	Fuel Line, Engnie Overflow Return	Cut to 82”, 3/16” I.D.
2	132647	1	Fuel Shutoff	
3	340481	1	Cover, Sender	
4	554748	1	Fuel Line, Tank to Pre-Filter	Cut to xx”, 5/16” I.D.
5	554748	1	Fuel Line, Pre-Filter to Fuel Pump	Cut to xx”, 5/16” I.D.
6	554748	1	Fuel Line, Fuel Pump to Fuel Filter	Cut to xx”, 5/16” I.D.
7	361117	3	Bushing	
8	361748	1	Valve, Overflow	
9	362615	4	Washer, Special	
10	366526	8	Clamp, Hose	
11	400188	6	Screw, 5/16-18 x 1” Hex Head	
12	400264	1	Screw, 3/8-16 x 1-1/4” Hex Head	
13	403910	5	Screw, #10-24 x 1/2” Truss Head	
14	441606	1	Bolt, Carriage 1/4-20 x 3/4”	
15	441614	1	Bolt, Carriage 5/16-18 x 1”	
16	441689	2	Carriage Bolt, 1/2-13 x 8-1/2”	
17	443102	1	Nut, 1/4-20 Hex	
18	443106	7	Nut, 5/16-18 Hex	
19	443110	2	Nut, 3/8-16 Hex	
20	443118	4	Nut, 1/2-13 Hex	
21	446130	1	Lockwasher, 1/4 Heavy	
22	446136	7	Lockwasher, 5/16 Heavy	
23	446140	2	Lockwasher, 3/8	
24	452006	9	Flat Washer, 5/16	
25	452008	3	Flatwasher, 3/8	
26	452012	1	Flat Washer, 1/2	
27	453023	1	Flat Washer, 1/4	
28	2721806	1	Cap, Fuel	
29	2810702	1	Valve, Needle	
30	3006265	1	Tank, Fuel	
31	3006639	1	Sender, Fuel	
32	3008820	1	Clamp, Double Hose (5/8” O.D.)	
33	3009236	1	Wall, Fender	
34	3009979	1	Fender	
35	5001182	1	Filter, Pre Fuel	
36	4135918	1	Pump, Fuel	
37	446142	1	Lockwasher, 3/8 Heavy	

> Change from previous revision

Serial No. All

26.1 Pump and 4WD Valve Mounting

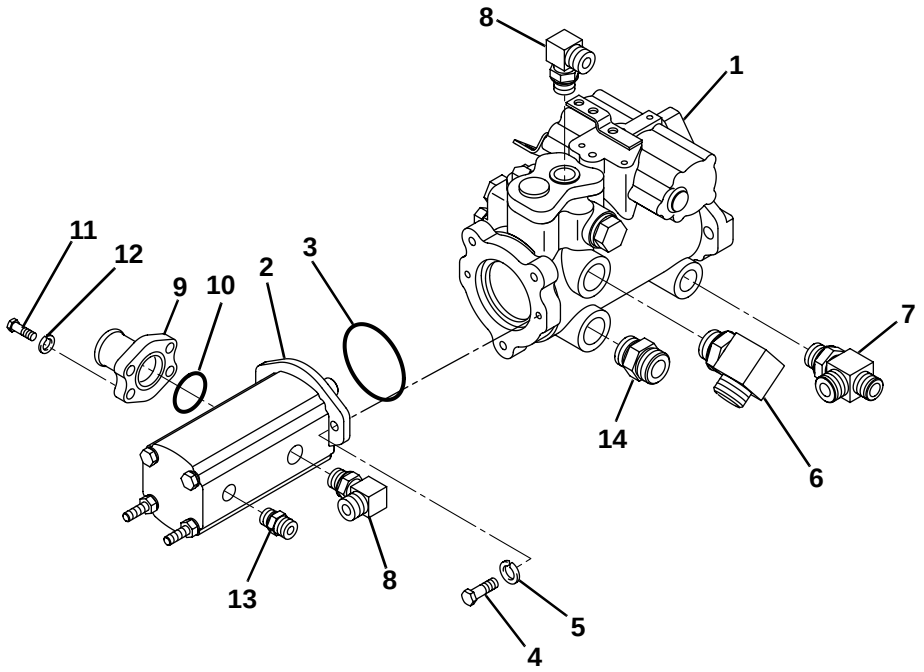


9016-06

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	–	1	Pump Assembly	See 27.1
2	4135556	1	4WD Valve with Oil Shuttle	See 56.1
3	400406	4	Screw, 1/2-13 x 1-1/4” Hex Head	
4	446154	6	Lockwasher, 1/2 Heavy	
5	453017	4	Flat Washer, 1/2	
6	400412	2	Screw, 1/2-13 x 2” Hex Head	
7	3006658	1	Bracket, Pump Support	
8	443118	2	Nut, 1/2-13 Hex	
9	440082	4	Carriage Bolt, 5/16-18 x 1”	
10	452006	4	Flat Washer, 5/16	
11	446136	4	Lockwasher, 5/16 Heavy	
12	443106	4	Nut, 5/16-18 Hex	
13	3006913	1	Bracket, Pump Support	
14	446140	2	Lockwasher, 3/8	Included with Pump
15	443110	2	Nut, 3/8-16 Hex	Included with Pump

> Change from previous revision

27.1 Pump Assembly



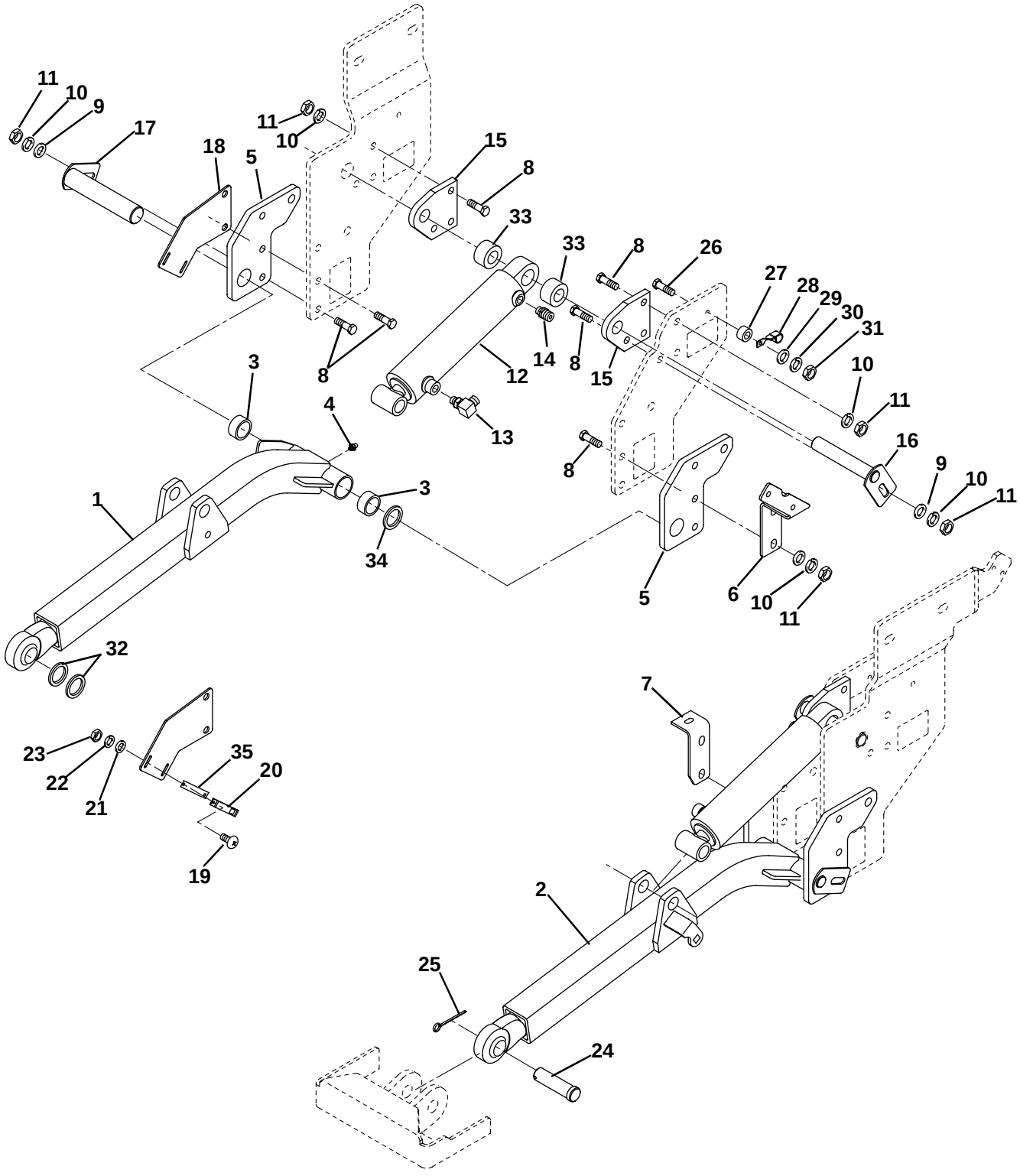
9016-07

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1002927	1	Pump, Traction	
	5003034	1	• Seal Kit	
	5003432	1	• Control Kit	
	5003433	1	• Shaft Seal Kit	
	5003544	1	• System Relief Kit	
2	1003248	1	Pump, Double	
	5003165	1	• Seal Kit, Front Section	
	5003166	1	• Seal Kit, Rear Section	
3	362743	1	O-RIng	
4	400262	2	Screw, 3/8-16 x 1” Hex Head	
5	446142	2	Lockwasher, 3/8 Heavy	
6	340077	1	Adapter, 90°	
7	340269	1	Adapter, Tee	
8	340070	2	Adapter, 90°	
9	3006829	1	Fitting, 4 Bolt Flange	
10	3006835	1	O-Ring, 1-3/4” O.D. x 1-1/2” I.D.	
11	400336	4	Screw, 7/16-14 x 1-1/4” Hex Head	
12	446148	4	Lockwasher, 7/16 Heavy	
13	339984	1	Adapter, Straight	
14	339999	1	Adapter, Straight	

> Change from previous revision

Serial No. All

28.1 Front Lift Arms and Cylinders



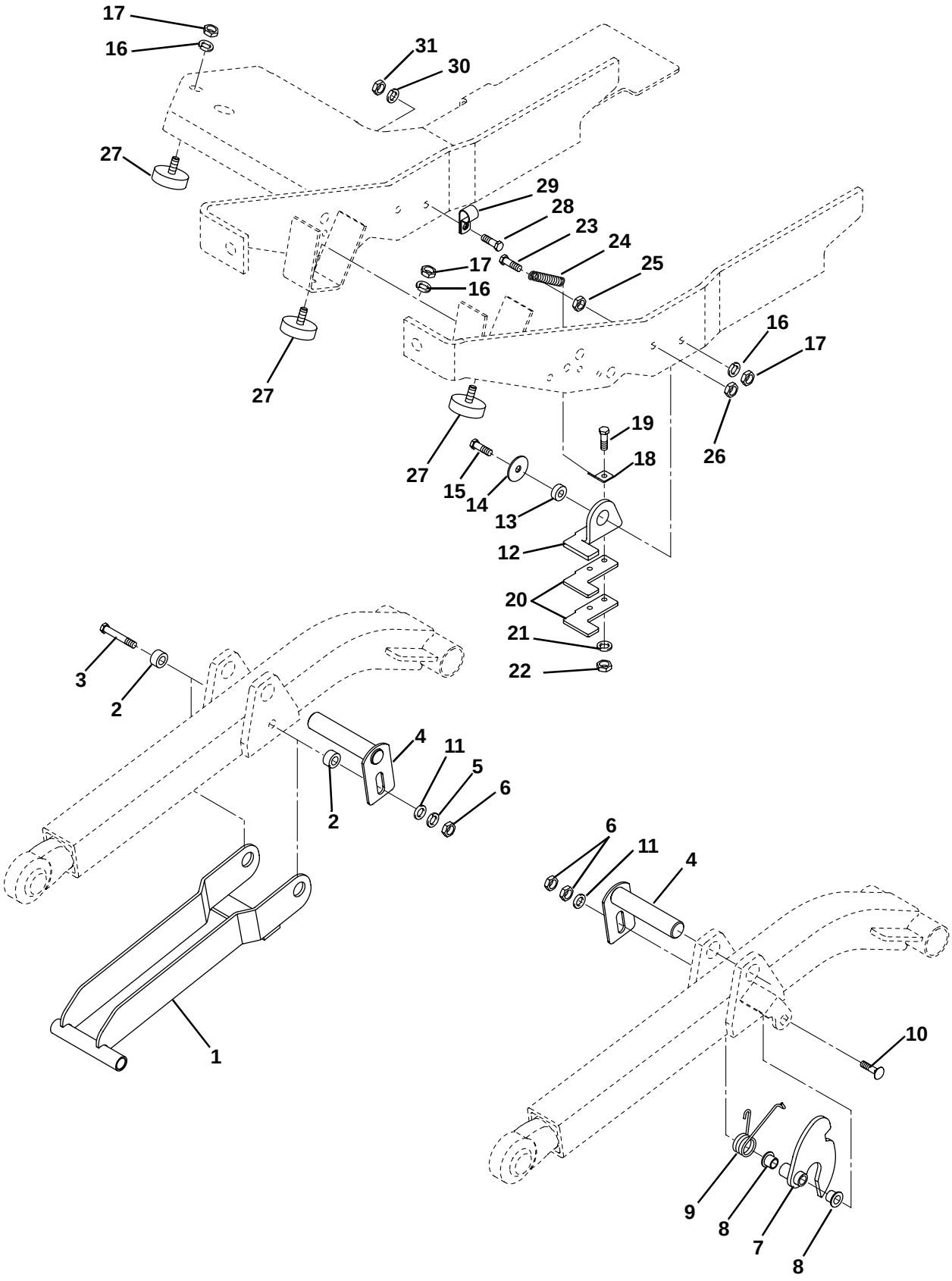
9016-09

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1002785	1	R.H. Front Lift Arm	
2	1003900	1	L.H. Front Lift Arm	
3	342033	4	• Bushing	
4	471214	2	• Grease Fitting	
5	3006490	4	Bracket, Front Deck Pivot	
6	3007091	1	Angle, R.H. Valve Mount	
7	3007092	1	Angle, L.H. Valve Mount	
8	400412	28	Screw, 1/2-13 x 2” Hex Head	
9	453017	4	Flat Washer, 1/2	
10	446154	28	Lockwasher, 1/2 Heavy	
11	443118	28	Nut, 1/2-13 Hex	
12	3006008	2	Front Lift Cylinder	See 53.1
13	340061	2	Adapter, 90°	
14	339979	2	Adapter, Straight	
15	3006491	4	Bracket, Front Cylinder Pivot	
16	1003274	2	Pin, Front Cylinder	
17	1003275	2	Pin, Front Lift Arm Pivot	
18	3007468	1	Bracket, Switch	
19	403746	2	Screw, #10-24 x 3/4” Truss Head	
20	3007392	1	Switch, Proximity	**REFERENCE SW8, See 68.1**
21	452002	2	Flat Washer, #10	
22	446118	2	Lockwasher, #10 Heavy	
23	444310	2	Nut, #10-24 Hex	
24	3007680	2	Pin, Front Deck Mounting	
25	460054	2	Cotter Pin, 3/16 x 1-3/4”	
26	400192	2	Screw, 5/16-18 x 1-1/2” Hex Head	
27	3004410	2	Spacer	
28	3009269	2	Clamp, Wire Harness Twisted	
29	452006	2	Flat Washer, 5/16	
30	446134	2	Lockwasher, 5/16	
31	443106	2	Nut, 5/16-18 Hex	
32	455004	2	Flat Washer, 1”	
33	3010015	4	Spacer	
34	364830	AR	Thrust Washer	
35	3009193	5	Shim, Switch	

> Change from previous revision

29.1 Front Deck Latch

Serial No. All



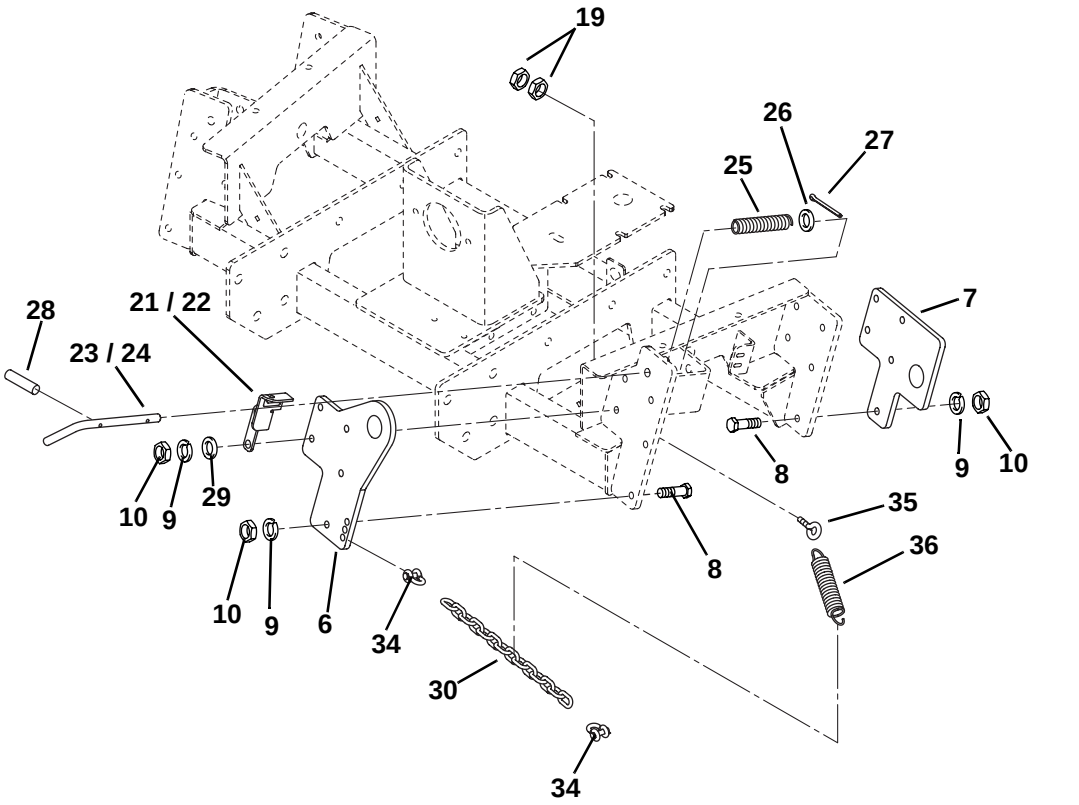
9016-05

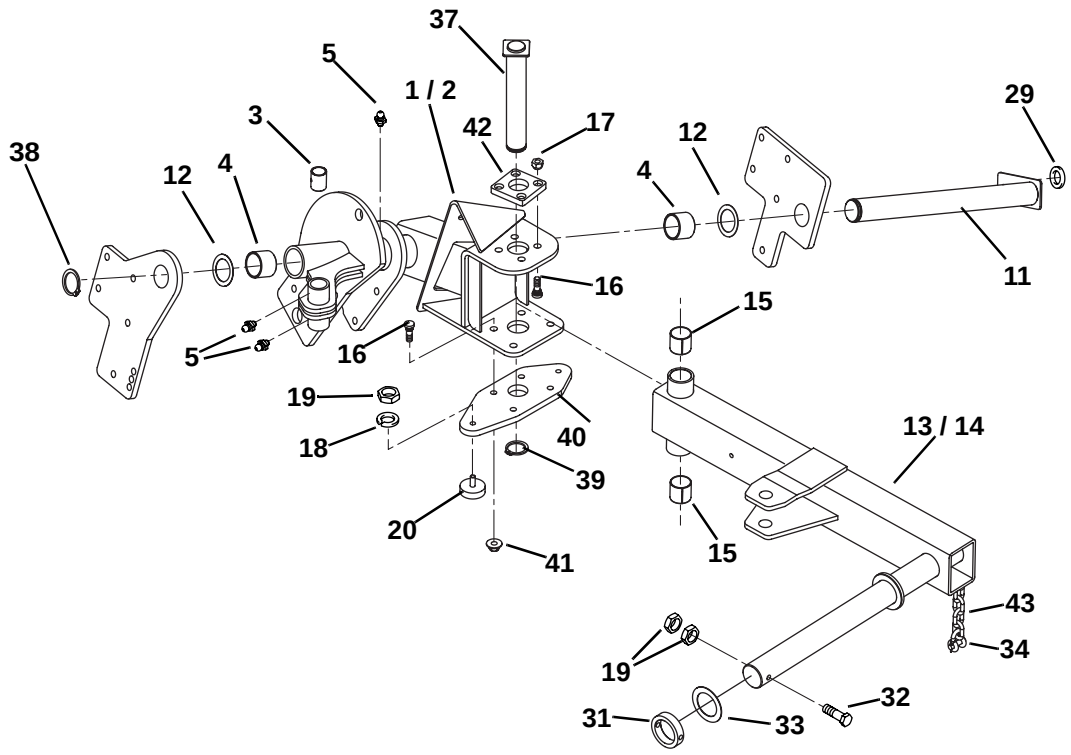
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003483	1	Brace, Stand Up	
2	365826	2	Spacer	
3	400430	1	Screw, 1/2-13 x 5-1/2” Hex Head	
4	1003277	2	Pin, Cylinder Rod End	
5	446154	1	Lockwasher, 1/2 Heavy	
6	443118	3	Nut, 1/2-13 Hex	
7	1003484	1	Latch, Front Deck	
8	352936	2	• Bushing	
9	3008472	1	Spring, Torsion	
10	441690	1	Carriage Bolt, 1/2-13 x 7”	
11	453017	2	Flat Washer, 1/2	
12	3008453	1	Stop, Anti Sway Latch	
13	352435	1	Spacer	
14	319755	1	Washer	
15	400264	1	Screw, 3/8-16 x 1-1/4” Hex Head	
16	446142	4	Lockwasher, 3/8 Heavy	
17	443110	4	Nut, 3/8-16 Hex	
18	3007297	1	Tab, Spring	
19	400114	2	Screw, 1/4-20 x 1-1/4” Hex Head	
20	3007712	2	Shim	
21	446128	2	Lockwasher, 1/4	
22	443102	2	Nut, 1/4-20 Hex	
23	400194	1	Screw, 5/16-18 x 1-3/4” Hex Head	
24	346802	1	Spring, Extension	
25	443806	1	Nut, 5/16-18 Hex Jam	
26	444718	1	Locknut, 5/16-18 Center	
27	361723	3	Stop, Rubber	
28	400186	1	Screw, 5/16-18 x 7/8” Hex Head	
29	354081	1	Clamp, Wire Harness	
30	446134	1	Lockwasher, 5/16	
31	443106	1	Nut, 5/16-18 Hex	

> Change from previous revision

30.1 Side Lift Arms

Serial No. All





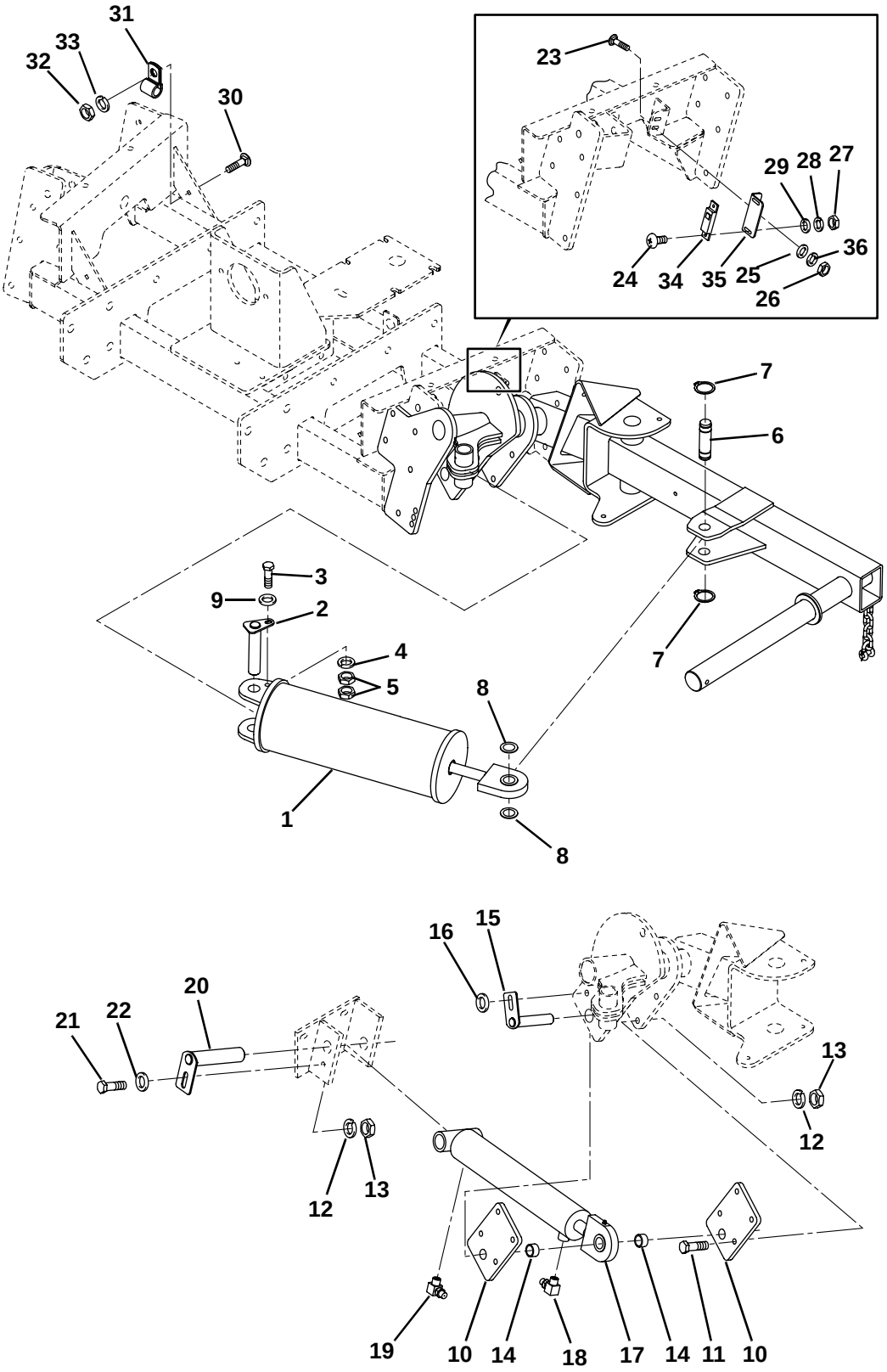
9016-28

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1005016	1	Pivot, Left Side Arm	
2	1005017	1	Pivot, Right Side Arm	
3	304569	4	• Bushing	
4	332351	4	• Bushing	
5	471214	6	• Grease Fitting	
6	3006294	2	Plate, Side Arm Pivot	
7	3006295	2	Plate, Side Arm Pivot	
8	400412	20	Screw, 1/2-13 x 2” Hex Head	
9	446154	20	Lockwasher, 1/2 Heavy	
10	444758	20	Locknut, 1/2-13 Center	
11	2809628	2	Pin, Side Arm Pivot	
12	3006727	4	Washer, Thrust	
13	1002885	1	Left Side Lift Arm	
14	1002886	1	Right Side Lift Arm	
	471214	2	• Grease Fitting	
15	350800	4	• Bushing	
16	362464	16	Wheel Bolt	
17	346294	8	Wheel Nut	
18	446142	8	Lockwasher, 3/8 Heavy	
19	443110	16	Nut, 3/8-16 Hex	
20	361723	8	Stop, Rubber	
21	3007897	1	Bracket, Left Side Deck Latch	
22	3007896	1	Bracket, Right Side Deck Latch	
23	3009163	1	Bolt, Left Side Deck Latch	
24	3009162	1	Bolt, Right Side Deck Latch	
25	3009309	2	Spring, Compression	
26	453020	2	Flat Washer, 5/8	
27	460052	2	Cotter Pin, 3/16 x 1-1/2”	
28	461408	2	Spring Pin, 1/4 x 1-1/2”	
29	452012	6	Flat Washer, 1/2	
30	360297.2	2	Chain, Dump Box	
31	3006204	2	Collar	
32	401030	2	Screw, 3/8-16 x 3-3/4” Hex Head	
33	363572	AR	Washer	
34	162716.2	8	Shackle, Chain	
35	366978	2	Eyebolt	
36	3008374	2	Spring, Extension	
37	1005018	2	Pin, Lift Arm	
38	2809630	2	Retaining Ring, Side Arm Pivot	
39	3010825	2	Retaining Ring, Lift Arm	
40	2811064	1	Plate, Left Side Bottom	
41	444730	8	Locknut, 7/16-20 Hex	
42	3010811	2	Collar	
43	363746	4	Chain	

> Change from previous revision

31.1 Side Lift Cylinders and Return Canisters

Serial No. All

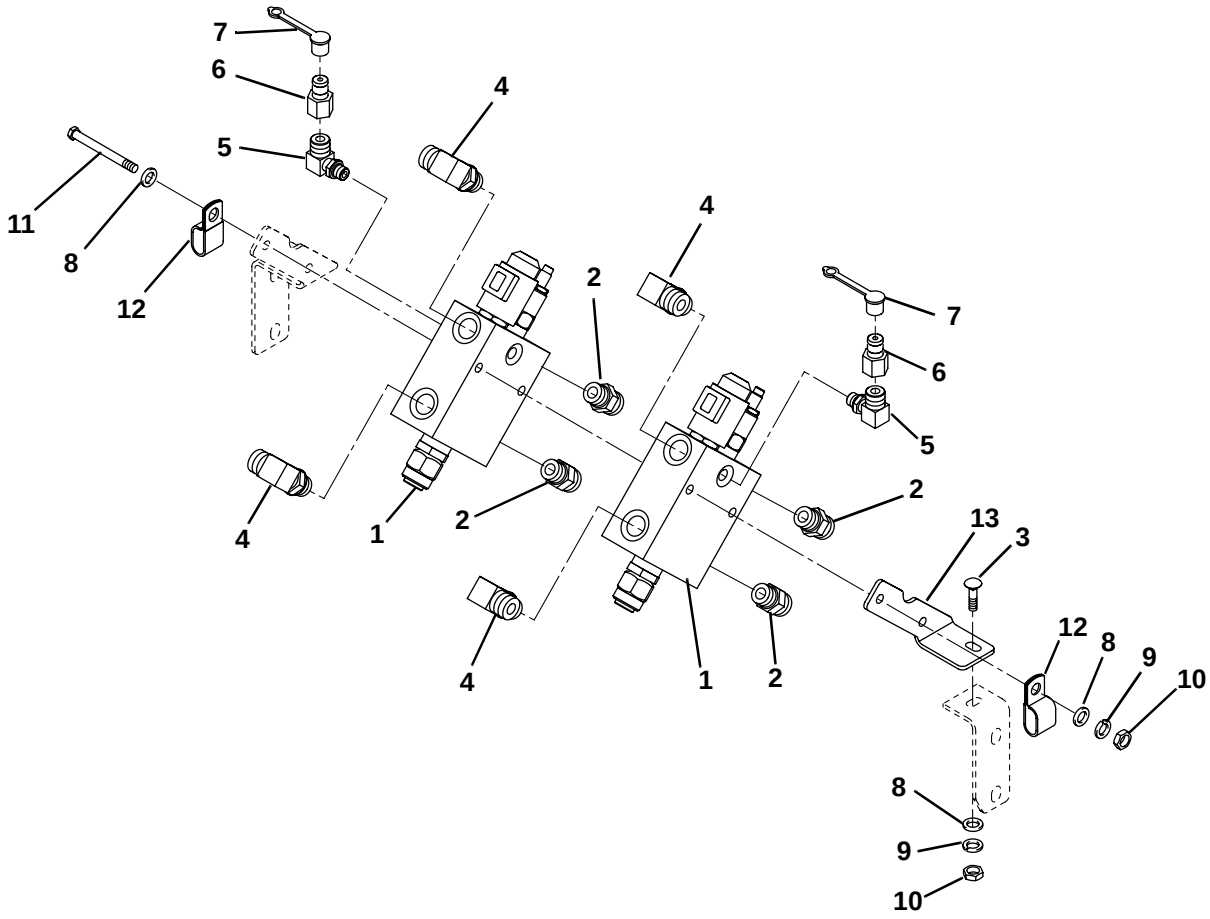


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5003371	2	Canister, Deck Return	See 51.1
2	1003823	2	Pin, Canister Mount	
3	400266	2	Screw, 3/8-16 x 1-1/2” Hex Head	
4	446140	2	Lockwasher, 3/8	
5	443110	4	Nut, 3/8-16 Hex	
6	3009535	2	Pin, Shear	
7	458039	4	Retaining Ring	
8	455004	4	Flat Washer	
9	453011	2	Flat Washer, 3/8	
10	3006293	4	Plate, Side Cylinder Mounting	
11	400412	14	Screw, 1/2-13 x 2” Hex Head	
12	446154	14	Lockwasher, 1/2 Heavy	
13	444758	14	Locknut, 1/2-13 Center	
14	3004092	4	Spacer	
15	1003277	1	Pin, Cylinder Rod End Mounting	
16	452012	2	Flat Washer, 1/2	
17	3006249	2	Cylinder, Rear Lift	See 54.1
18	340061	2	Adapter, 90°	
19	340078	2	Adapter, 90°	
20	1003272	2	Pin, Side Cylinder Mounting	
21	400408	2	Screw, 1/2-13 x 1-1/2” Hex Head	
22	453017	2	Flat Washer, 1/2	
23	441606	2	Carriage Bolt, 1/4-20 x 3/4”	
24	403912	4	Screw, #10-24 x 5/8” Truss Head	
25	453023	2	Flat Washer, 1/4	
26	443102	2	Nut, 1/4-20 Hex	
27	444310	4	Nut, #10-24 Hex	
28	446118	4	Lockwasher, #10 Heavy	
29	452002	8	Flat Washer, #10	
30	441614	2	Carriage Bolt, 5/16-18 x 1”	
31	354081	2	Clamp, Wire Harness	
32	443106	2	Nut, 5/16-18 Hex	
33	446134	2	Lockwasher, 5/16	
34	3007392	2	Switch, Proximity	**REFERENCE SW4 & SW9, See 68.1**
35	3009026	2	Angle, Switch	
36	446128	2	Lockwasher, 1/4	

> Change from previous revision

32.1 Front Deck Valves

Serial No. All

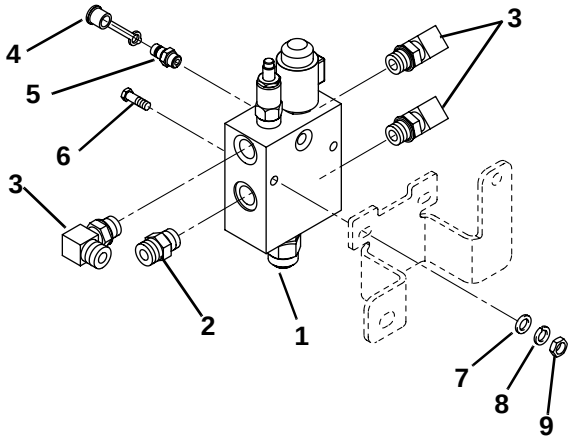


9016-22

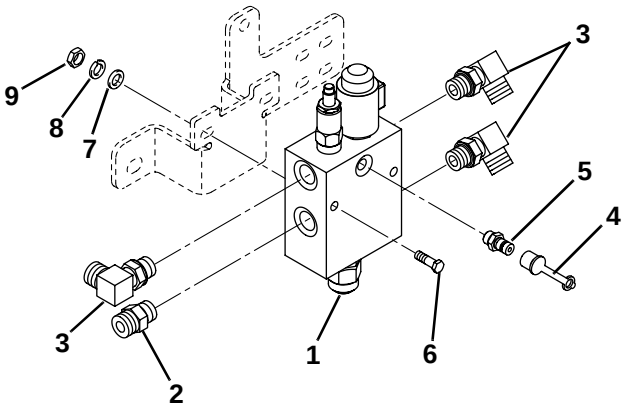
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4135582	2	Valve, Deck	**See 55.1**
2	339989	4	Adapter, Straight	
3	441624	1	Carriage Bolt, 3/8-16 x 1”	
4	340070	4	Adapter, 90°	
5	340065	2	Adapter, 90°	
6	364945	2	Fitting, Diagnostic	
7	363030	2	Cover, Dust	
8	452008	6	Flat Washer, 3/8	
9	446142	3	Lockwasher, 3/8 Heavy	
10	443110	3	Nut, 3/8-16 Hex	
11	401225	2	Screw, 3/8-16 x 6-1/2” Hex Head	
12	3008820	2	Clamp, Double Hose	
13	3008357	1	Angle, L.H. Valve Mount	

> Change from previous revision

33.1 Wing Deck Valves



Right Wing Valve



Left Wing Valve

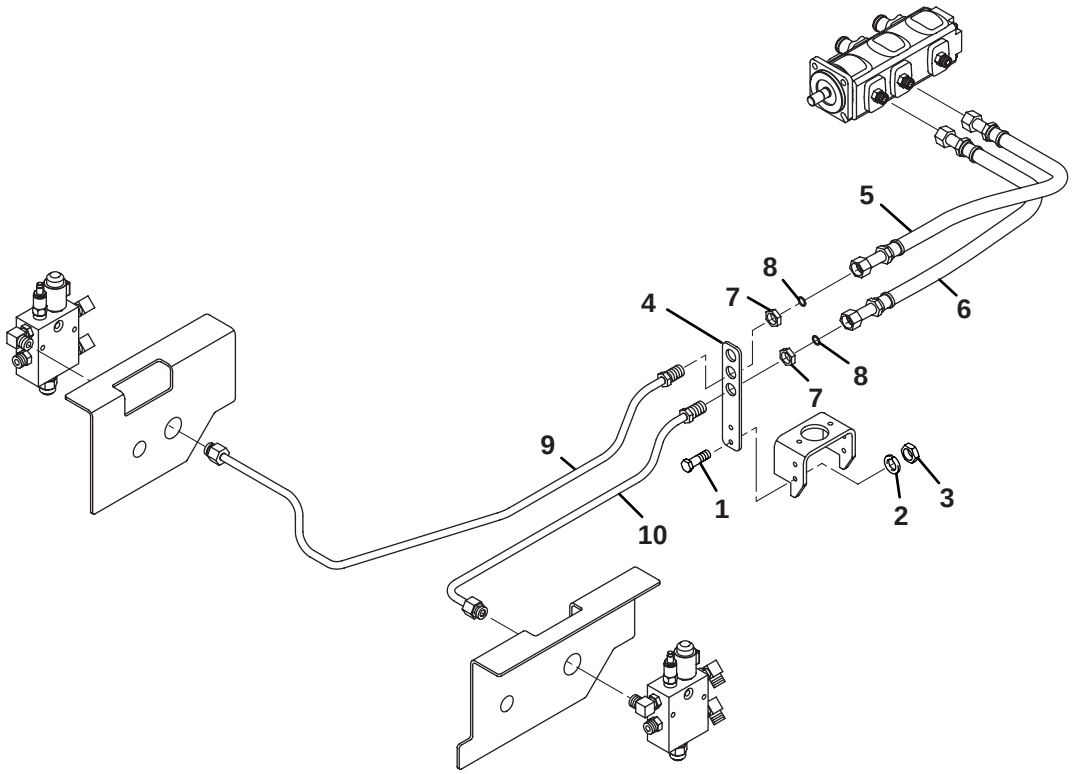
9016-23

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4135582	2	Valve, Deck	See 55.1
2	339989	2	Adapter, Straight	
3	340070	6	Adapter, 90°	
4	363030	2	Cover, Dust	
5	365466	2	Fitting, Diagnostic	
6	401028	4	Screw, 3/8-16 x 3-1/4” Hex Head	
7	452008	4	Flat Washer, 3/8	
8	446142	4	Lockwasher, 3/8 Heavy	
9	443110	4	Nut, 3/8-16 Hex	

> Change from previous revision

Serial No. All

34.1 Side Deck Valve Supply

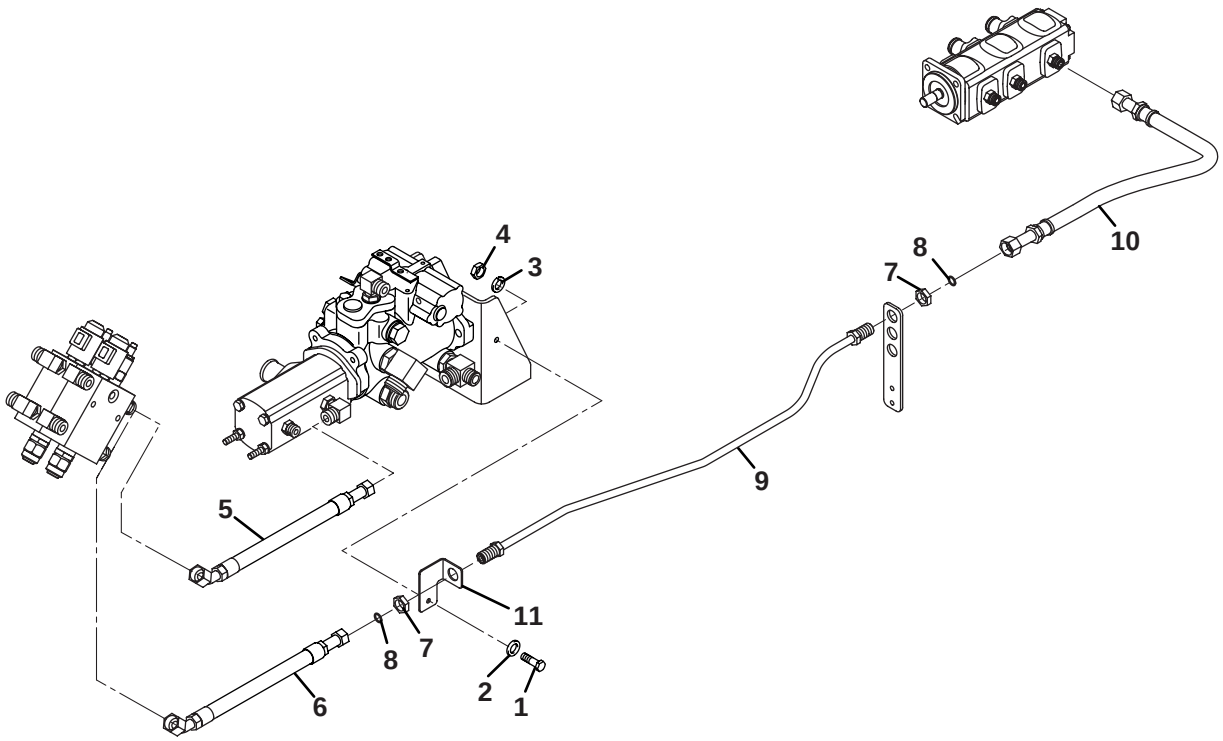


9016-31

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	400264	2	Screw, 3/8-16 x 1-1/4” Hex Head	
2	446142	2	Lockwasher, 3/8 Heavy	
3	443110	2	Nut, 3/8-16 Hex	
4	4135253	1	Plate, Tube Mounting	
5	4135262	1	Hose, Pump to Right Side Tube	
6	4135408	1	Hose, Pump to Left Side Tube	
7	339963	2	Locknut, Bulkhead	
8	339899	2	O-Ring, SAE #10	
9	4135259	1	Tube, Right Side Deck Valve Supply	
10	4135260	1	Tube, Left Side Deck Valve Supply	

> Change from previous revision

35.1 Front Deck Valve Supply



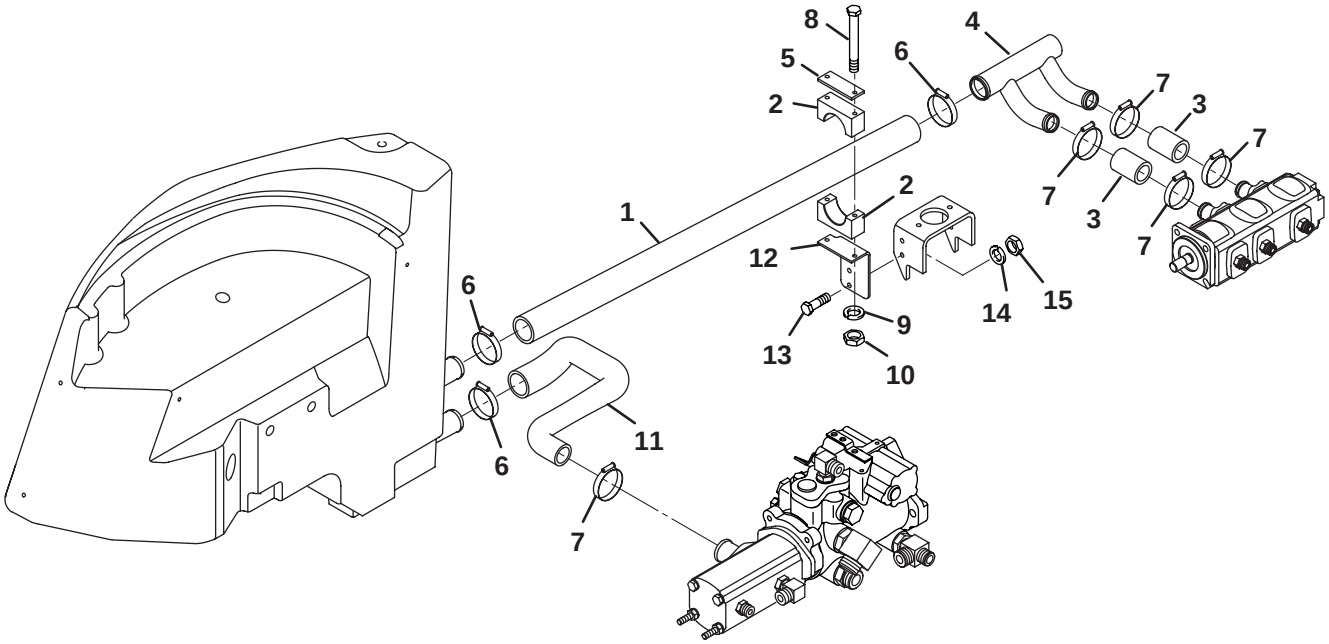
9016-32

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	400264	1	Screw, 3/8-16 x 1-1/4” Hex Head	
2	452008	1	Flat Washer, 3/8	
3	446142	1	Lockwasher, 3/8 Heavy	
4	443110	1	Nut, 3/8-16 Hex	
5	1003607	1	Hose, Pump to Left Front Valve	
6	4135589	1	Hose, Pump to Right Front Valve	
7	339963	2	Locknut, Bulkhead	
8	339899	2	O-Ring, SAE #10	
9	4135409	1	Tube, Right Front Valve	
10	1003587	1	Hose, Pump to Tube	
11	4135425	1	Bracket, Tube	
12	473144	1	Tie Wrap (Not Shown)	

> Change from previous revision

36.1 Pump Supply

Serial No. All



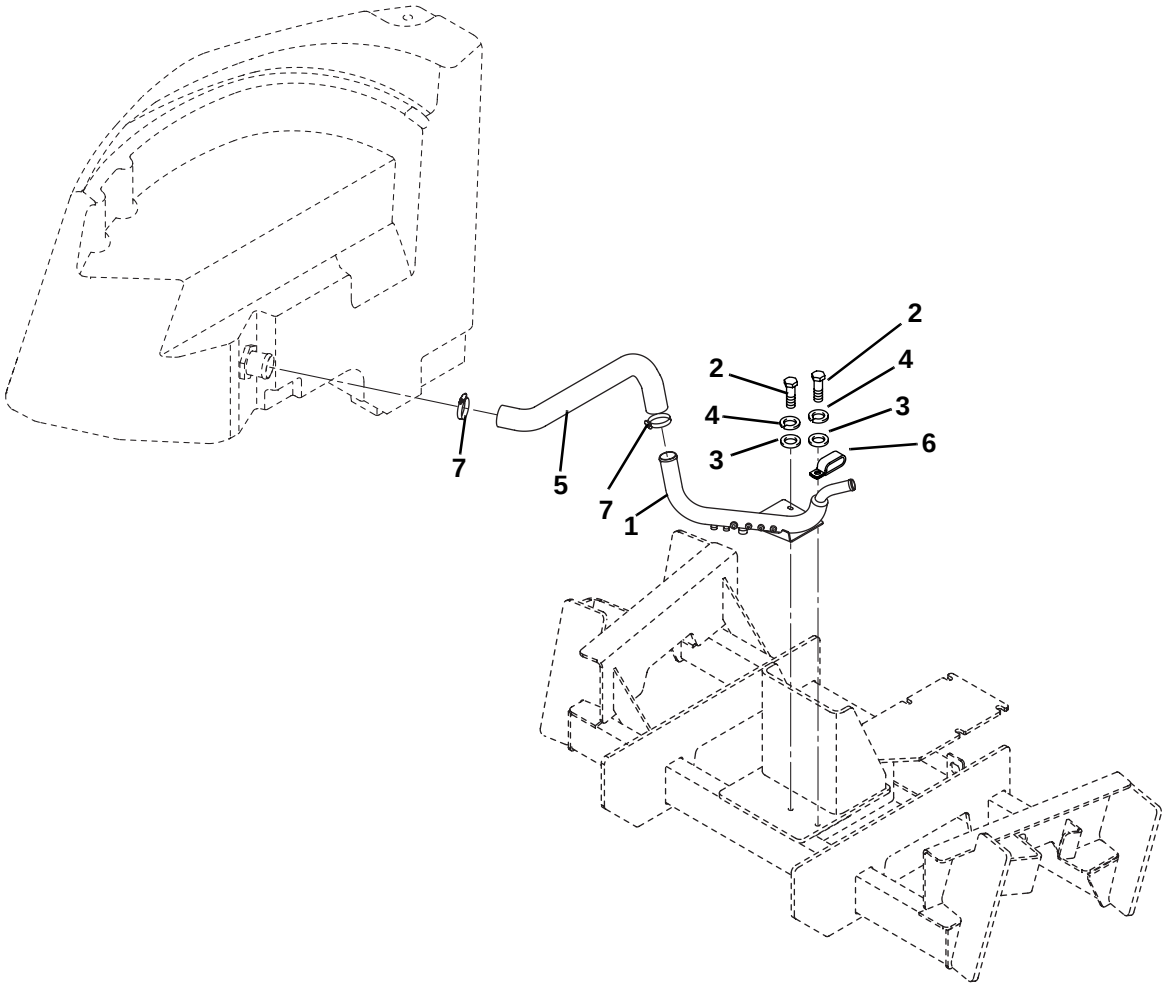
9016-30

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4135240	1	Hose, Rear Pump Suction	
2	4136342	4	Clamp	
3	3007775	2	Hose, Rear Pump Inlet	
4	4135233	1	Manifold, Rear Pump Suction	
5	4136343	2	Plate, Clamp	
6	359615	3	Clamp, Hose	
7	326112	5	Clamp, Hose	
8	400208	4	Screw, 5/16-18 x 4-1/2” Hex Head	
9	446136	4	Lockwasher, 5/16 Heavy	
10	443106	4	Nut, 5/16-18 Hex	
11	3007060	1	Hose, Front Pump Inlet	
12	4136341	1	Bracket, Rear Plumbing	
13	400264	2	Screw, 3/8-16 x 1-1/4” Hex Head	
14	446142	2	Lockwasher, 3/8 Heavy	
15	443110	2	Nut, 3/8-16 Hex	

> Change from previous revision

Serial No.

37.1 Return Manifold



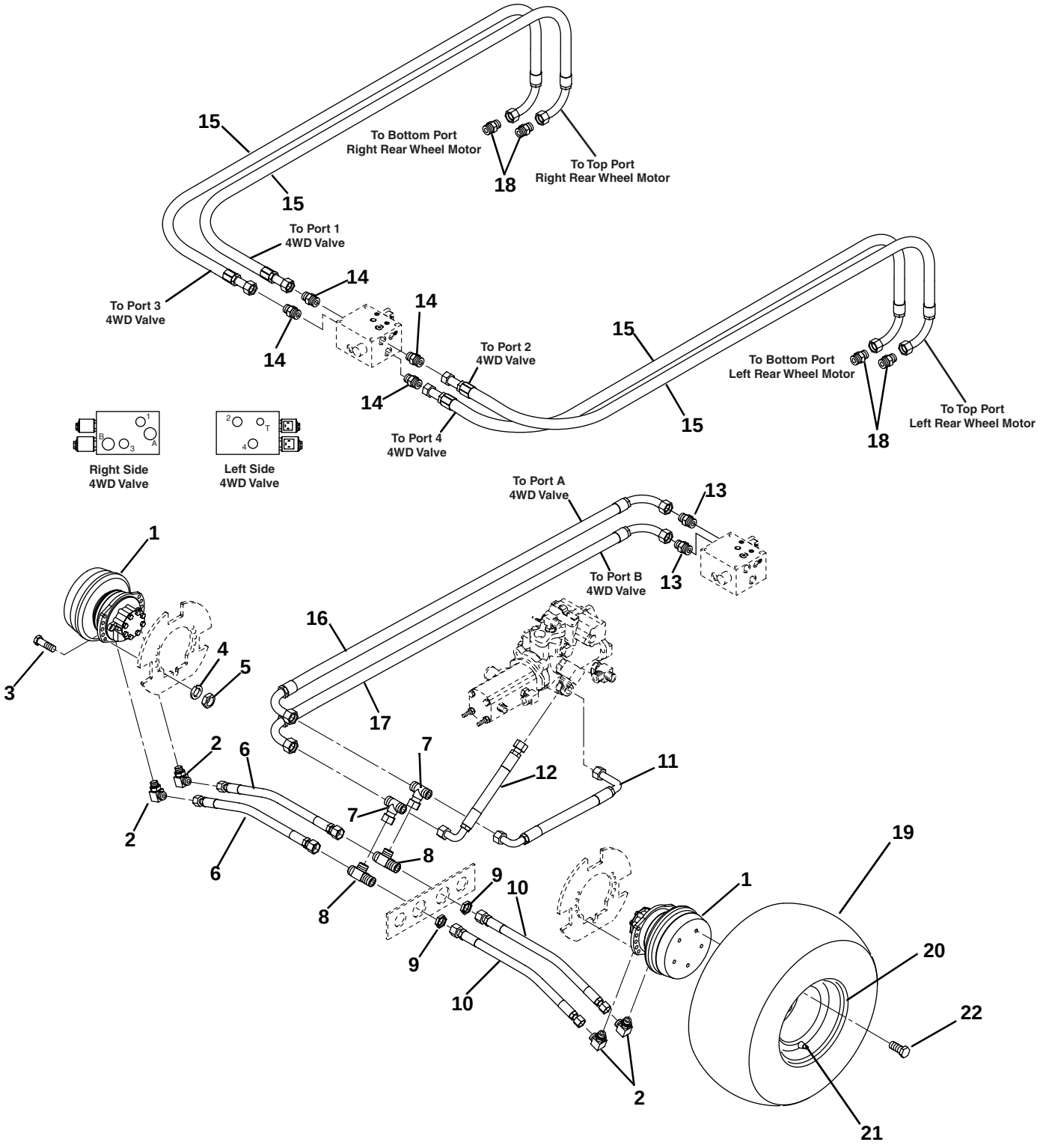
9016-39

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003891	1	Return Manifold	
2	400266	2	Screw, 3/8-16 x 1-1/2” Hex Head	
3	452008	2	Flat Washer, 3/8	
4	446140	2	Lockwasher, 3/8	
5	3007061	1	Hose, Return	
6	3008820	1	Clamp, Double Hose	
7	359615	2	Clamp, Hose	

> Change from previous revision

38.1 Traction Hydraulics

Serial No. All



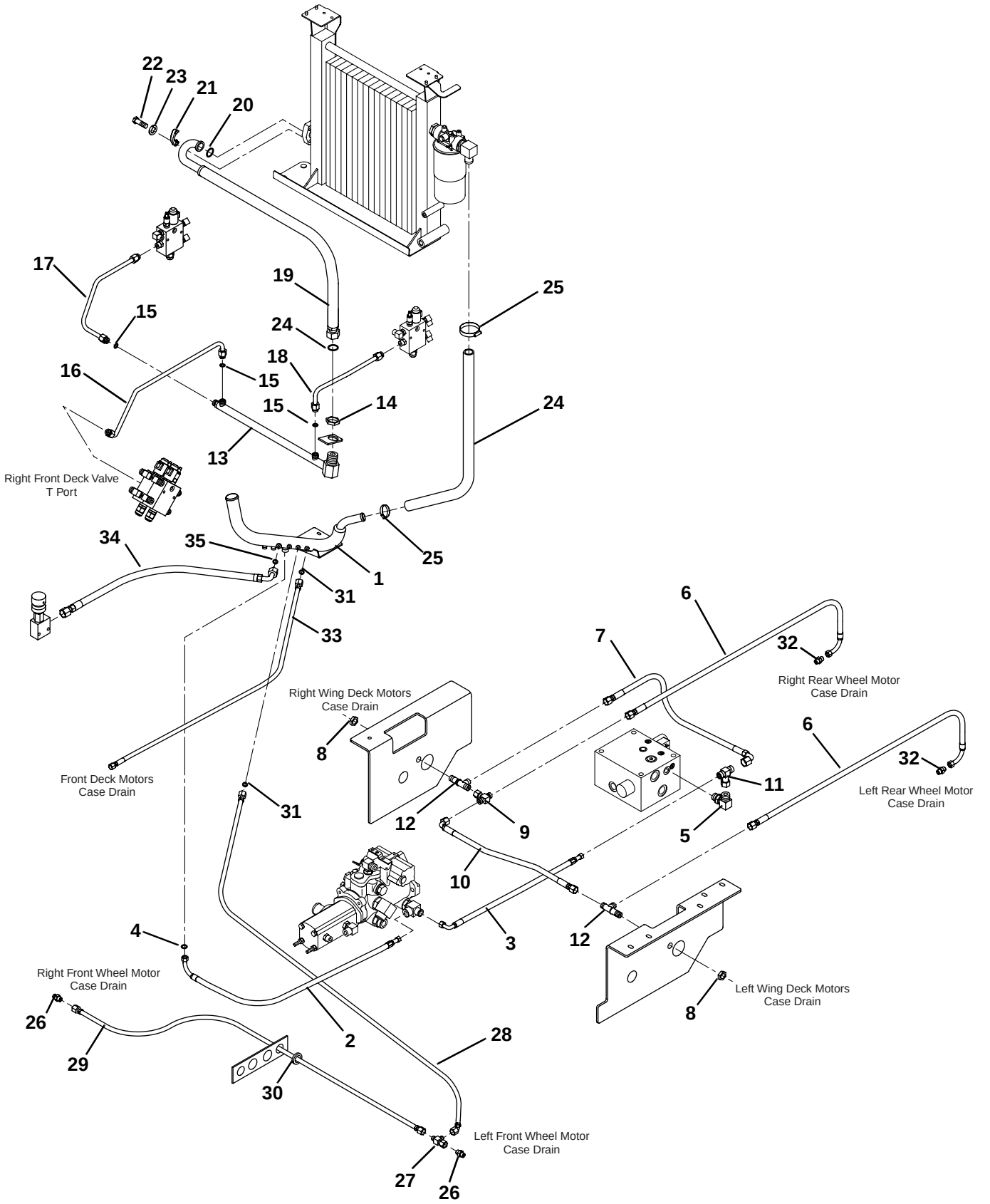
9016-33

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1002769	2	Wheel Motor, Front	
	5003641	1	• Brake Shoe Kit	
	5003642	1	• Mechanical Control Kit	
	5003643	1	• Adjusting System Kit	
	5003651	1	• Motor Seal Kit	
2	340074	4	Adapter, 90°	
3	400410	20	Screw, 1/2-13 x 1-3/4” Hex Head	
4	446154	20	Lockwasher, 1/2 Heavy	
5	443118	20	Nut, 1/2-13 Hex	
6	1003307	2	Hose, Tee to Right Wheel Motor	
7	340147	2	Adapter, Tee	
8	340219	2	Adapter, Bulkhead Tee	
9	339965	2	Nut, Bulkhead	
10	1003308	2	Hose, Tee to Left Wheel Motor	
11	1003310	1	Hose, Traction Pump to Front Tee	
12	1003309	1	Hose, Traction Pump to Rear Tee	
13	339994	2	Adapter, Straight	
14	339989	4	Adapter, Straight	
15	1003313	4	Hose, 4WD Valve to Rear Motors	
16	1003311	1	Hose, Rear Tee to 4WD Valve	
17	1003312	1	Hose, Front Tee to 4WD Valve	
18	339990	4	Adapter, Straight	
19	5003421	2	Tire, 29 x 14-15 Ultra Trac TL	
20	5003422	2	Wheel	
21	363233	2	Inflation Valve	
22	3007683	12	Wheel Bolt, 1/2-20	

> Change from previous revision

39.1 Return Hydraulics

Serial No. All



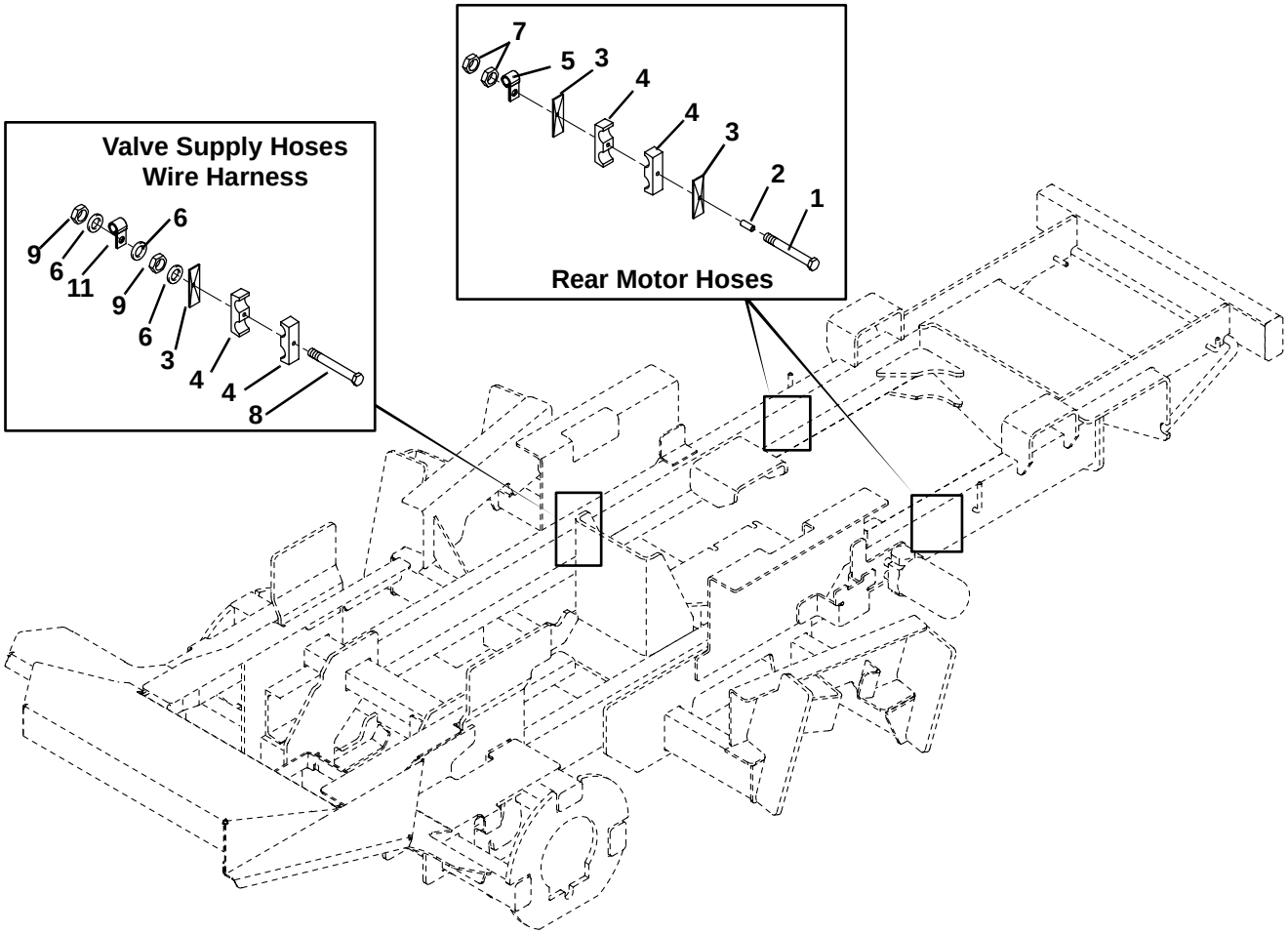
9016-34

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	–	1	Return Manifold	See 37.1
2	1003573	1	Hose, Pump to Return Manifold	
3	1003575	1	Hose, 4WD Valve to Pump	
4	339911	1	O-Ring, SAE #10 Face Seal	
5	340065	1	Adapter, 90°	
6	1003604	2	Hose, Rear Wheel Motor Drain	
7	1003577	1	Hose, Right Tee to 4WD Valve	
8	339961	2	Locknut, Bulkhead	
9	340143	1	Adapter, Tee	
10	1003574	1	Hose, Right Tee to Left Tee	
11	340144	1	Adapter, Tee	
12	340215	2	Adapter, Bulkhead Tee	
13	1003988	1	Manifold, Cooler Inlet	
14	339966	1	Locknut, Bulkhead	
15	339899	3	O-ring, SAE #10	
16	1003862	1	Tube, Right Front Valve to Inlet	
17	1003860	1	Tube, Right Side Valve to Inlet	
18	1003861	1	Tube, Left Side Deck to Inlet	
19	1004266	1	Hose, Cooler Inlet to Cooler	
20	3006835	1	O-Ring, 1-3/4” O.D. x 1-1/2” I.D.	
21	3009496	2	Flange Half, 1-1/4 SAE #20	
22	400336	4	Screw, 7/16-14 x 1-1/4 Hex Head	
23	446148	4	Lockwasher, 7/16 Heavy	
24	3007767	1	Hose, Cooler to Return Manifold	
25	3008673	2	Clamp, Constant Torque	
26	339974	2	Adapter, Straight	
27	340118	1	Adapter, Tee	
28	1003592	1	Hose, Tee to Return Manifold	
29	1003603	1	Hose, Right Motor to Left Motor	
30	365660	1	Grommet	
31	339909	2	O-Ring, SAE #6 Face Seal	
32	339972	2	Adapter, Straight	
33	2810188	1	Hose, Front Deck Motor Case Drain	
34	1003608	1	Hose, Back Pressure Valve Return	
35	339910	1	O-Ring, SAE #8 Face Seal	

> Change from previous revision

40.1 4WD Hose Clamps

Serial No. All

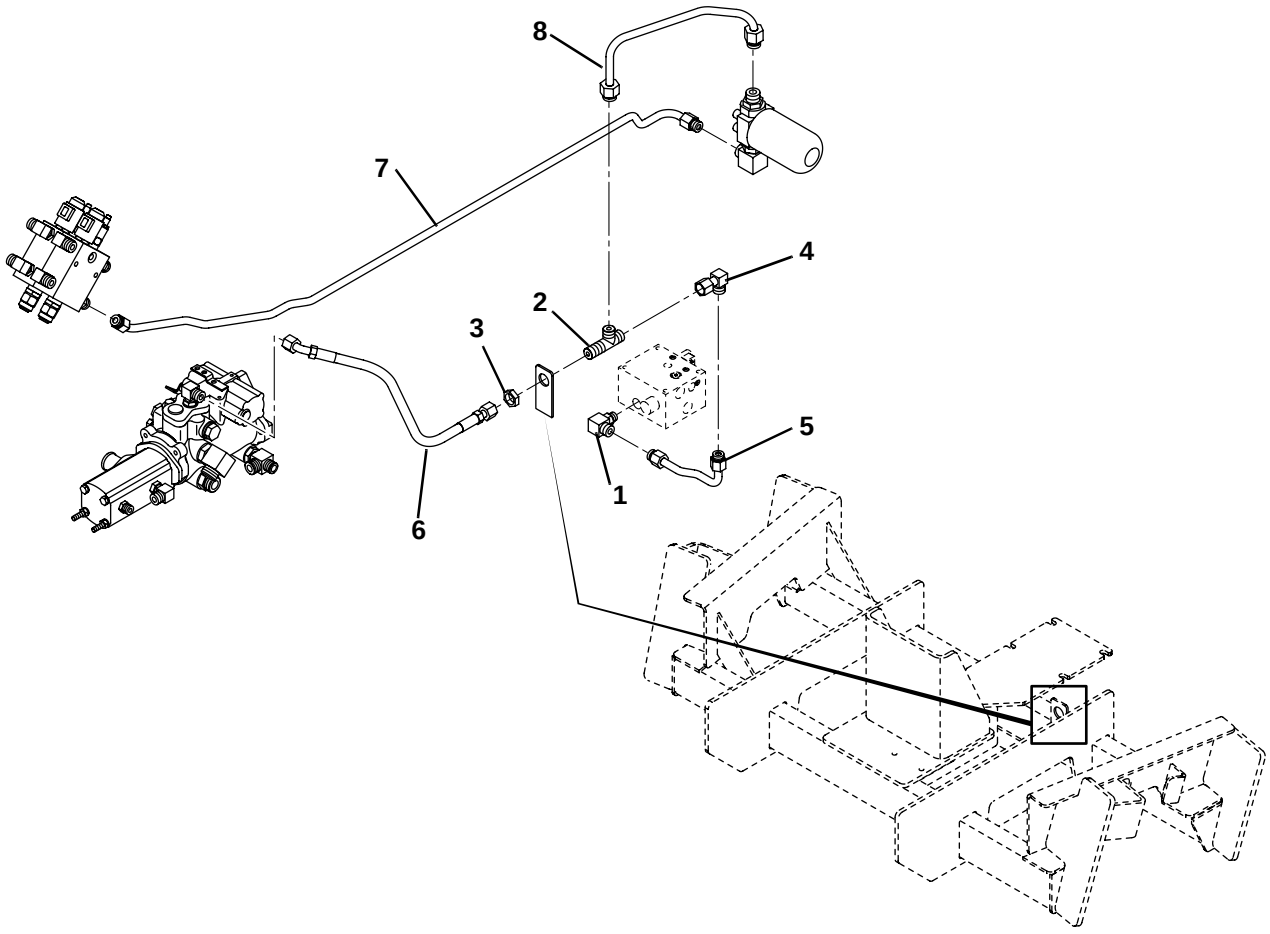


9016-41

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	400210	2	Screw, 5/16-18 x 5” Hex Head	
2	366114	2	Spacer	
3	3008792	5	Spacer Plate	
4	3008793	6	Clamp, Double Hose	
5	366424	2	Clamp, Hose	
6	452006	3	Flat Washer, 5/16	
7	443106	4	Nut, 5/16-18 Hex	
8	400204	1	Screw, 5/16-18 x 3-1/2” Hex Head	
9	444718	2	Nut, 5/16-18 Center	
10	473144	2	Tie Wrap (Not Shown)	Used on rear motor hoses after clamp.
11	365566	1	Clamp, Wire Harness	

> Change from previous revision

41.1 Charge Pressure



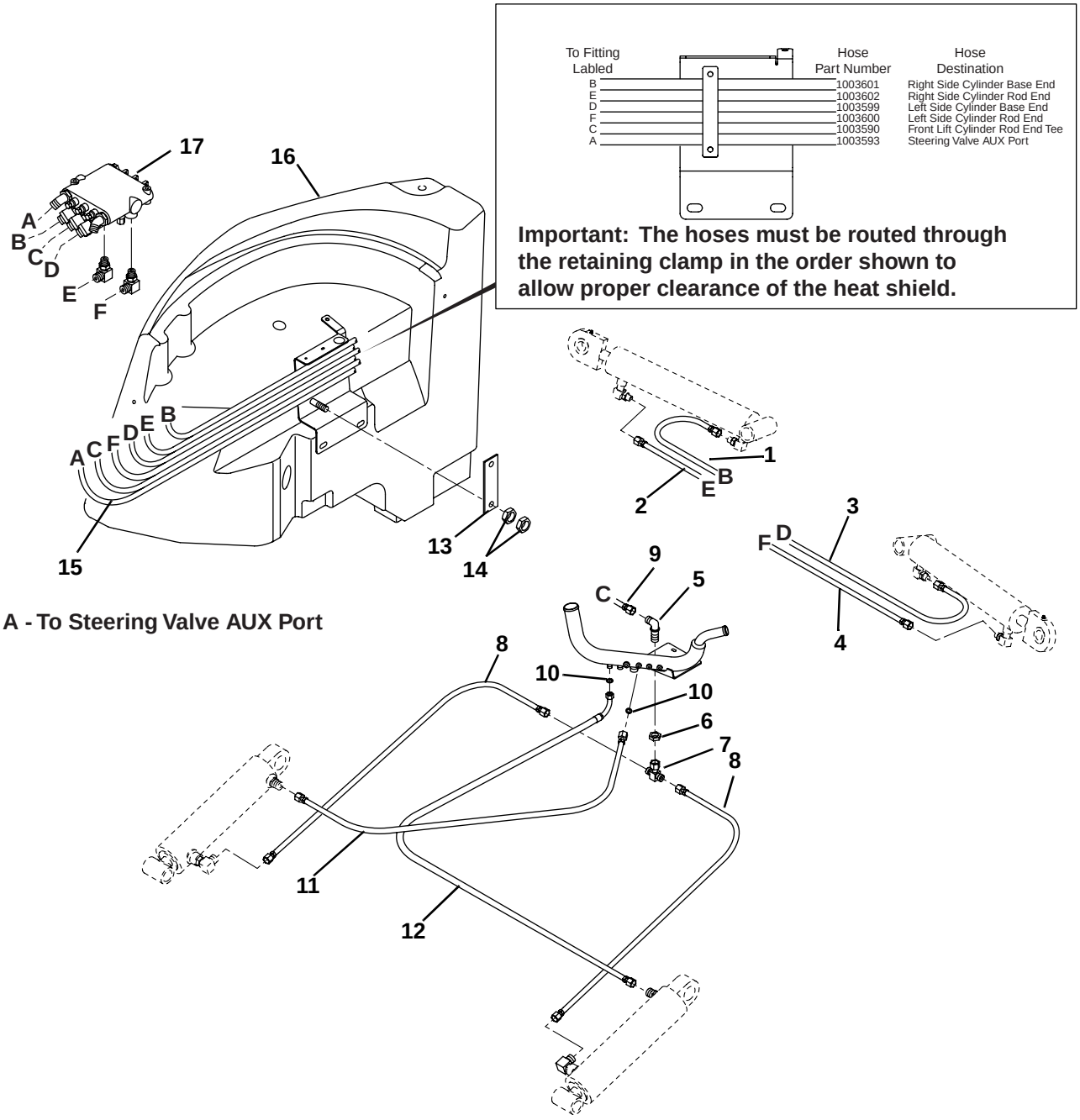
9016-40

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	340069	1	Adapter, 90°	
2	340217	1	Adapter, Tee	
3	339963	1	Locknut, Bulkhead	
4	340377	1	Adapter, 90°	
5	1003878	1	Tube, 4WD Valve to Tee	
6	1003605	1	Hose, Tee to Pump	
7	1003865	1	Tube, Lift Valve to Filter	
8	1003864	1	Tube, Filter to Tee	

> Change from previous revision

42.1 Lift Valve Hydraulics

Serial No. All

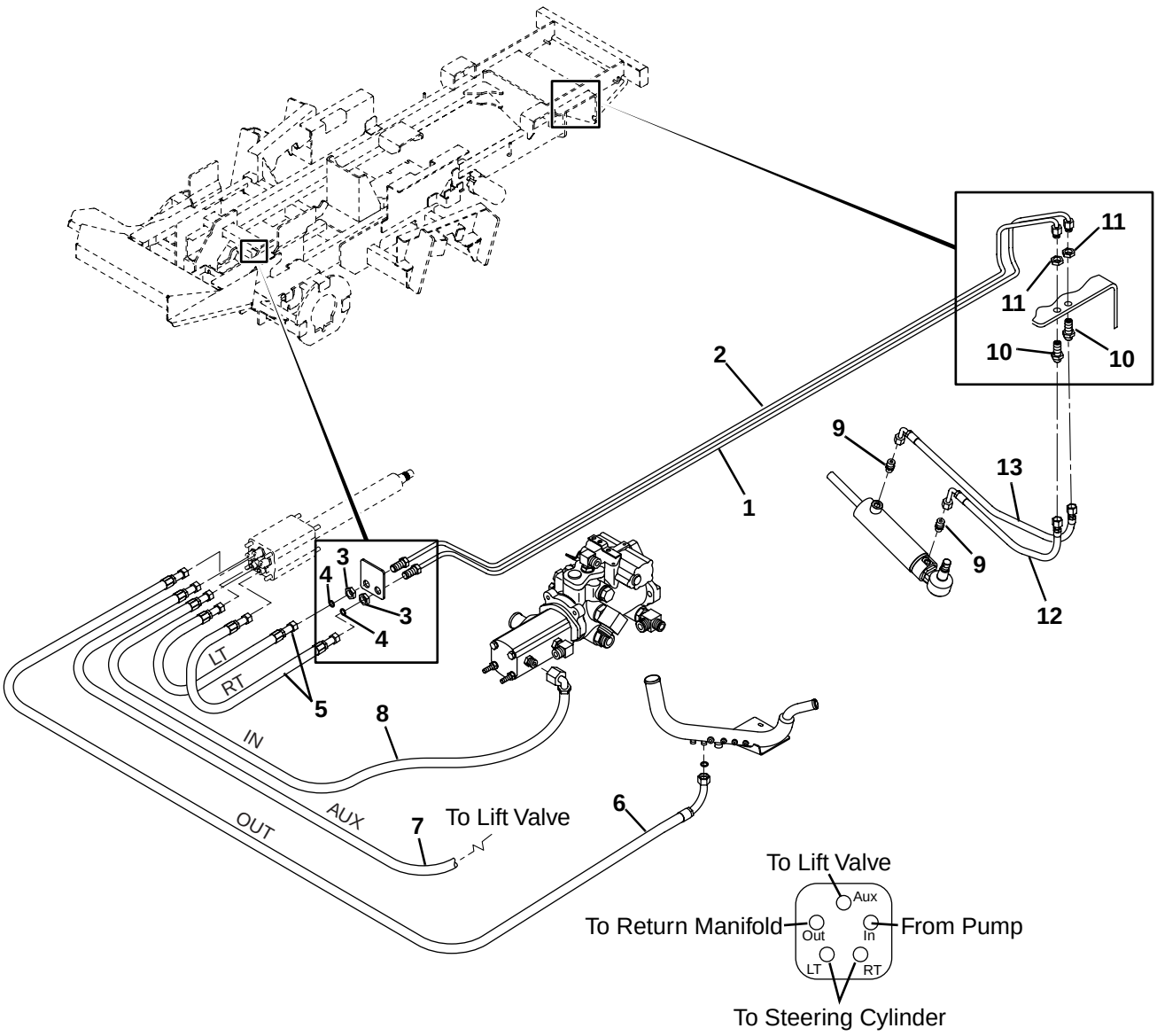

To Fitting Labled
Hose Part Number
Hose Destination
B 1003601 Right Side Cylinder Base End
E 1003602 Right Side Cylinder Rod End
D 1003599 Left Side Cylinder Base End
F 1003600 Left Side Cylinder Rod End
C 1003590 Front Lift Cylinder Rod End Tee
A 1003593 Steering Valve AUX Port
Important: The hoses must be routed through the retaining clamp in the order shown to allow proper clearance of the heat shield.
A - To Steering Valve AUX Port

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003599	1	Hose, Right Side Cylinder Base End	
2	1003600	1	Hose, Right Side Cylinder Rod End	
3	1003601	1	Hose, Left Side Cylinder Base End	
4	1003602	1	Hose, Left Side Cylinder Rod End	
5	340167	1	Adapter, 90° Bulkhead	
6	339961	1	Nut, Bulkhead	
7	340143	1	Adapter, Tee	
8	1003591	2	Hose, Front Cylinders Rod End	
9	1003590	1	Hose, Lift Valve to Tee	
10	339909	2	O-Ring, SAE #6 Face Seal	
11	1003598	1	Hose, Right Front Cylinder Rod End	
12	1002940	1	Hose, Left Front Cylinder Rod End	
13	3008459	1	Plate, Hose Retaining Clamp	
14	443106	4	Nut, 5/16-18 Hex	
15	1003594	1	Hose, Steering Valve to Lift Valve	
16	–	1	Hydraulic Tank	See 23.1
17	–	1	Lift Valve	See 8.1

> Change from previous revision

Serial No. All

43.1 Power Steering Hoses

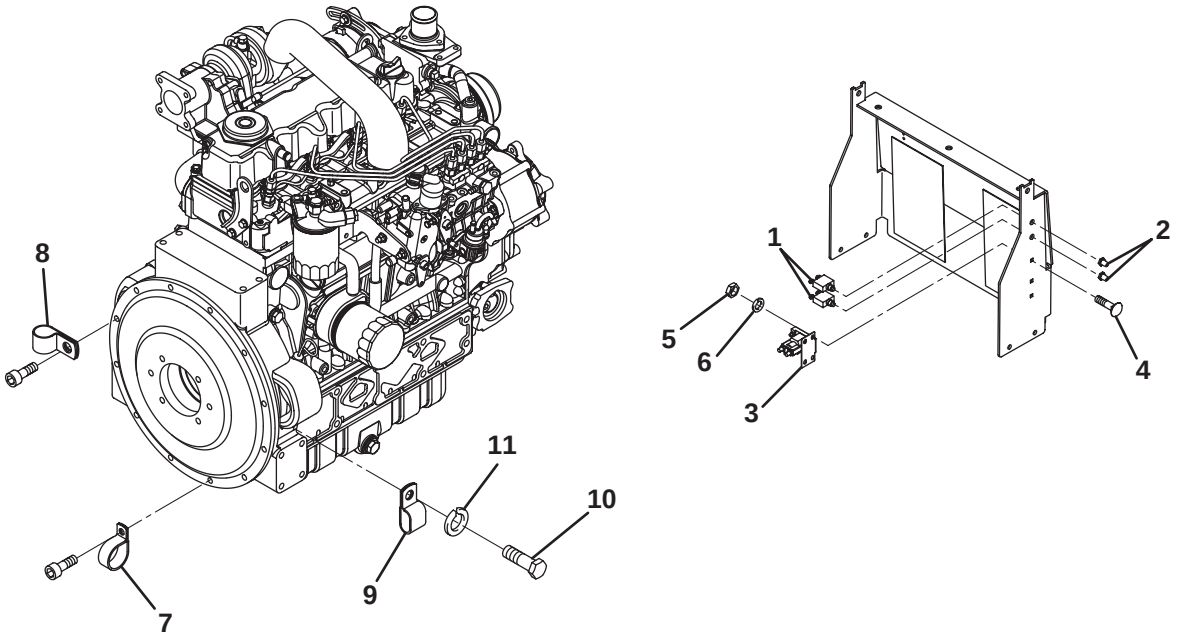


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003876	1	Tube, RT Hose to Rod End Hose	
2	1003875	1	Tube, LT Hose to Base End Hose	
3	339961	2	Locknut, Bulkhead	
4	339909	2	O-Ring, SAE #6 Face Seal	
5	1003606	2	Hose, Valve to Cylinder Tubes	
6	1003593	1	Hose, Valve to Return Manifold	
7	–	1	Hose, Steering Valve to Lift Valve	See 42.1
8	1003596	1	Hose, Gear Pump to Valve	
9	339979	2	Adapter, Straight	
10	340239	2	Adapter, Straight Bulkhead	
11	339961	2	Locknut, Bulkhead	
12	1003597	1	Hose, LT Tube to Cylinder Base End	
13	1003595	1	Hose, RT Tube to Cylinder Rod End	

> Change from previous revision

44.1 Engine Compartment Clamps

Serial No. All



9016-43

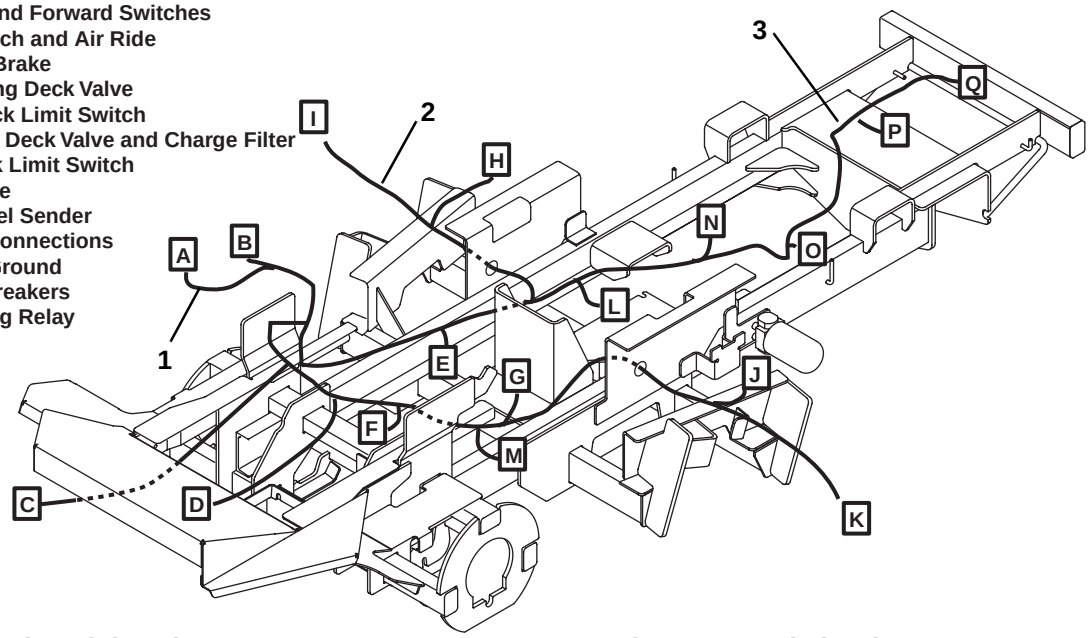
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3000359	2	Breaker, Circuit-50 Amp	**REFERENCE CB1 & CB2, See 68.1**
2	364774	2	Boot, Protective	
3	131905	1	Solenoid	
4	441606	2	Bolt, Carriage 1/4-20 x 3/4”	
5	443102	2	Nut, 1/4-20 Hex	
6	446130	3	Lockwasher, 1/4 Heavy	
7	364190	1	Clamp, 1-1/2”	
8	333801	1	Clamp, Hose	
9	3008820	1	Clamp, Double Hose	
10	365980	1	Bolt, M12 x 1.25 x 18 Hex Head	
11	446152	1	Lockwasher, 1/2	

> Change from previous revision

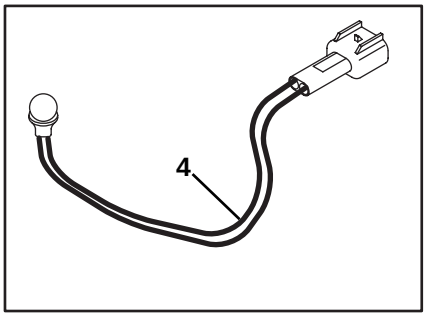
Serial No. All

45.1 Wire Harness Routing

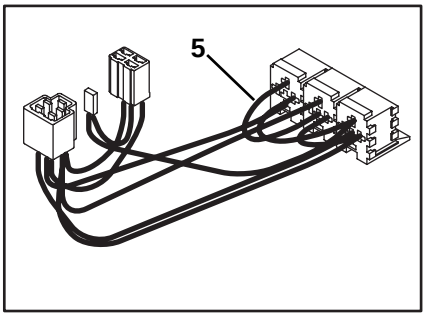
A - Instrument Panel
B - Oil Level, Horn and Seat Relay
C - Front Limit Switch and Cruise Magnet
D - Front Deck Valves
E - Neutral and Forward Switches
F - Seat Switch and Air Ride
G - Parking Brake
H - Right Wing Deck Valve
I - Right Deck Limit Switch
J - Left Wing Deck Valve and Charge Filter
K - Left Deck Limit Switch
L - 4WD Valve
M - Fuel Level Sender
N - Engine Connections
O - Engine Ground
P - Circuit Breakers
Q - Glow Plug Relay



Glow Plug Light Adapter
Located under Instrument Panel



Kubota Key Switch Adapter
Located under Instrument Panel



9016-44

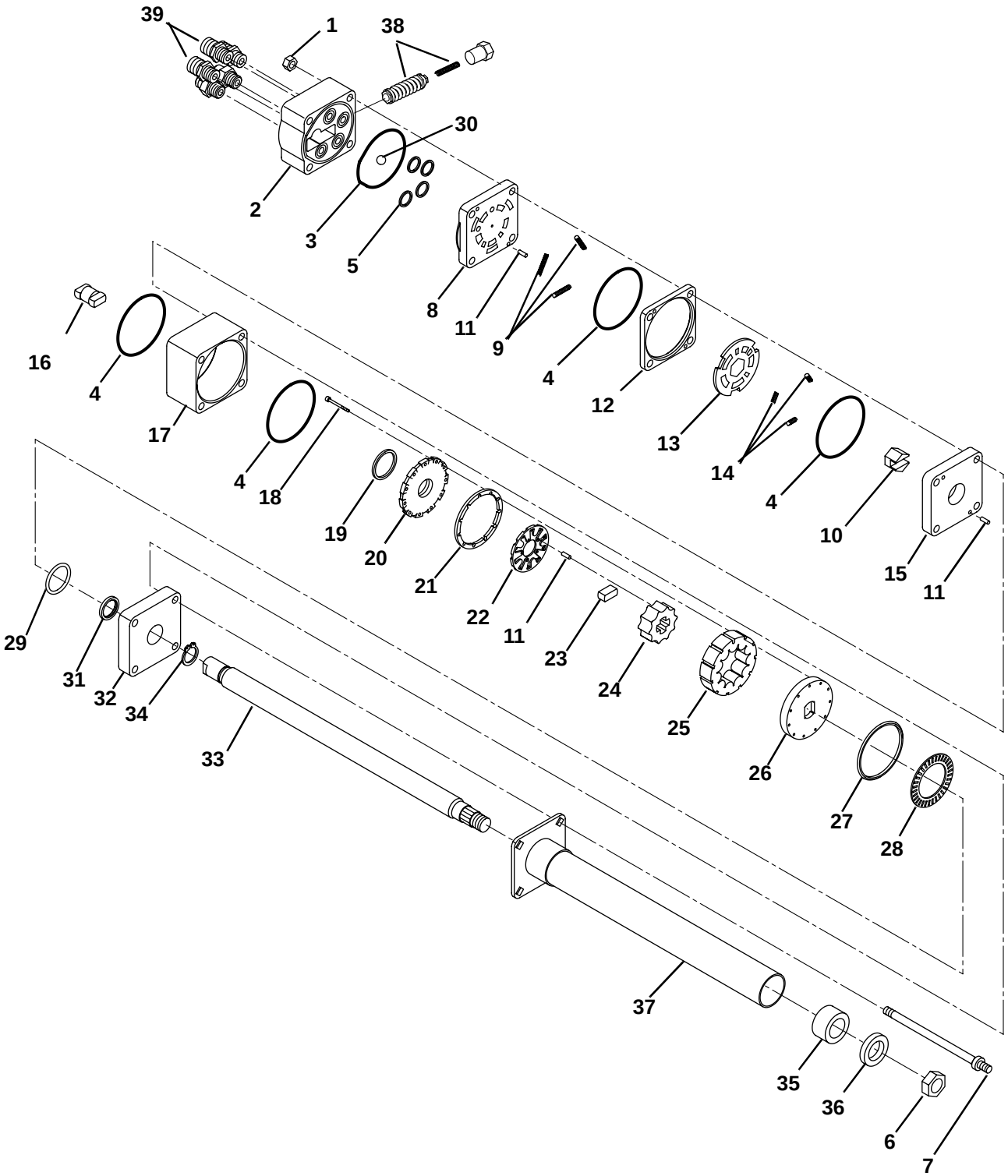
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4116909	1	Wire Harness, Console	
2	4135549	1	Wire Harness, Chassis	
3	4133830	1	Wire Harness, Engine	
4	1004931	1	Wire Harness, Glow Plug Light	**REFERENCE U5.2, See 68.1**
5	2822523	1	Wire Harness, Kubota Keyswitch	

> Change from previous revision

Serial No. All

46.1 Steering Valve

Part Number 1002800



TC500-28

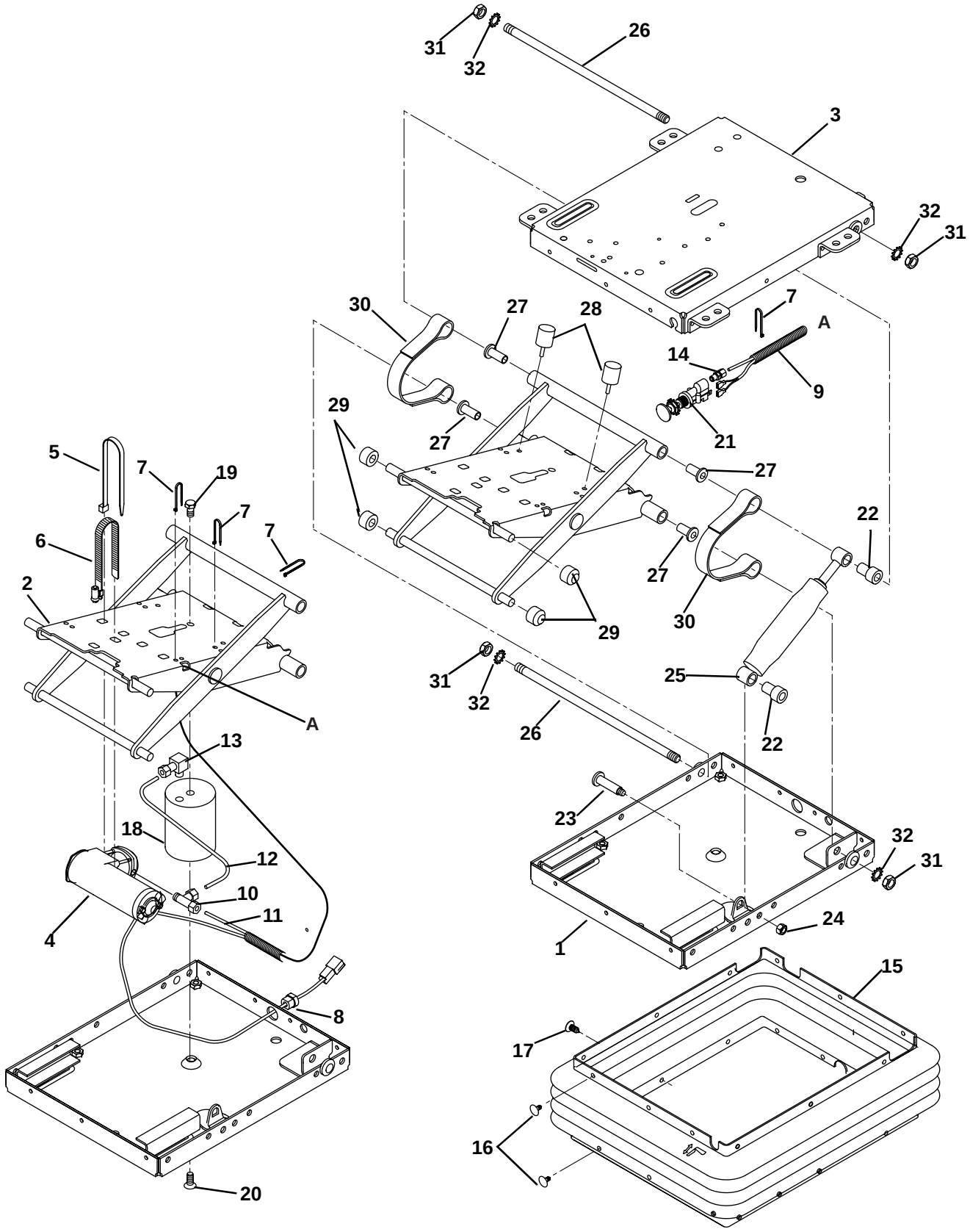
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	443108	4	Locknut, 5/16-18 Center	
2	N/S	1	Port Cover	
3	C	1	Seal, O-Ring	
4	C	4	Seal, O-RIng	
5	C	4	Seal, O-RIng	
6	443828	1	Nut, 5/8-18 Hex Jam	
7	N/S	4	Special Bolt	
8	N/S	1	Port Manifold	
9	B	3	Spring, Port Side	
10	503387	1	Hex Drive	
11	A and E	9	Needle Roller	
12	503398	1	Valve Ring	
13	503398	1	Valve Plate	
14	B	3	Spring, Shaft Side	
15	554854	1	Isolation Manifold	
16	551105	1	Drive Link	
17	N/S	1	Metering Ring	
18	A	11	Screw, Socket Head	
19	C	1	Seal, Commutator	
20	A	1	Commutator Cover	
21	A	1	Commutator RIng	
22	A	1	Commutator	
23	A	1	Spacer	
24	A	1	Rotor	
25	A	1	Stator	
26	A	1	Drive Plate	
27	554855	1	Spacer	
28	554856	1	Thrust Bearing	
29	C	1	Face Seal	
30	N/S	1	Ball, 9/32”	
31	554857	1	Seal, Spacer	
32	N/S	1	Upper Cover Plate	
33	D	1	Shaft	
34	D	1	Retaining RIng	
35	D	1	Bushing	
36	D	1	Seal	
37	D	1	Jacket	
38	557733	1	Relief Valve Cartridge	
39	339979	5	Adapter, Straight	
			Service Kits	
A	5003548	1	Metering Assembly Kit	
B	502924	1	Spring Kit	
C	557738	1	Seal Kit	
D	5003219	1	Jacket Tube Kit	
E	502925	1	Needle Roller Kit	

> Change from previous revision

Serial No. All

47.1 Air Suspension

Part No. 5003625



9016-62

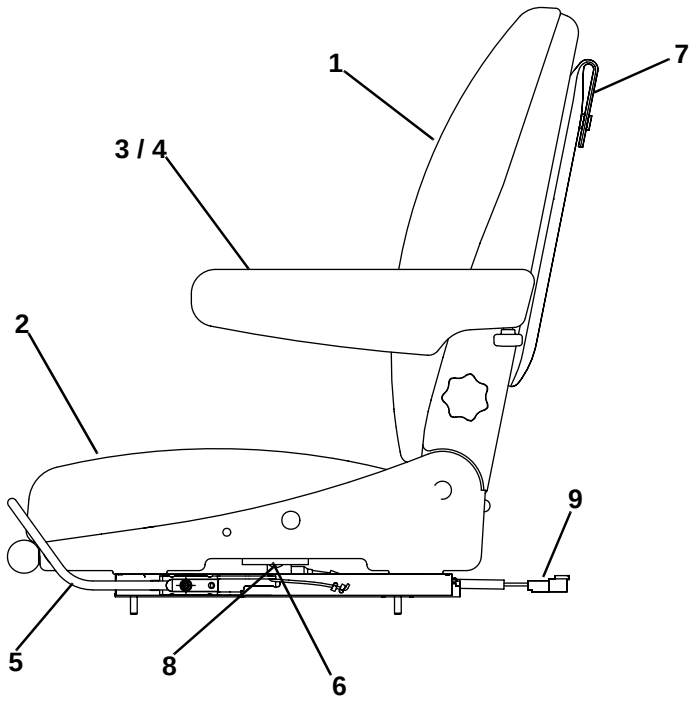
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	N/S	1	Lower Housing	
2	N/S	1	Scissors	
3	N/S	1	Upper Housing	
	5003627	1	Compressor Kit	
4	N/S	1	• Compressor	
5	N/S	1	• Tie Wrap	
6	N/S	1	• Clamp, Compressor	
7	N/S	4	• Tie Wrap	
8	N/S	1	• Bushing, Strain	
	5003628	1	Air Fitting/Tubing Kit	
9	N/S	1	• Braided Sleeve	
10	N/S	1	• Fitting, Tee	
11	N/S	1	• 3/16 O.D. Tubing	
12	N/S	1	• 3/16 O.D. Tubing	
13	N/S	1	• Fitting, 90°	
14	N/S	1	• Fitting, Straight	
	5003629	1	Boot and Clip Kit	
15	N/S	1	• Boot with Label	
16	N/S	21	• Clip, Christmas Tree	
17	N/S	6	• Clip, Christmas Tree	
	5003630	1	Airspring Kit	
18	N/S	1	• Airspring	
19	N/S	1	• Cap Screw	
20	N/S	1	• Cap Screw	
21	5003631	1	Valve Kit	
	5003632	1	Damper Kit	
22	N/S	2	• Bearing, Flanged	
23	N/S	1	• Threaded Pin	
24	N/S	1	• Nut, Hex Lock	
25	N/S	1	• Damper	
	5003633	1	Miscellaneous Kit	
26	N/S	2	• Shaft, Threaded	
27	N/S	4	• Bearing, Flanged	
28	N/S	2	• Bumper	
29	N/S	4	• Roller	
30	N/S	2	• Tether	
31	N/S	4	• Jam Nut	
32	N/S	4	• Lockwasher	

> Change from previous revision

48.1 Seat Assembly

Serial No. All

Part No. 5003626



9016-63

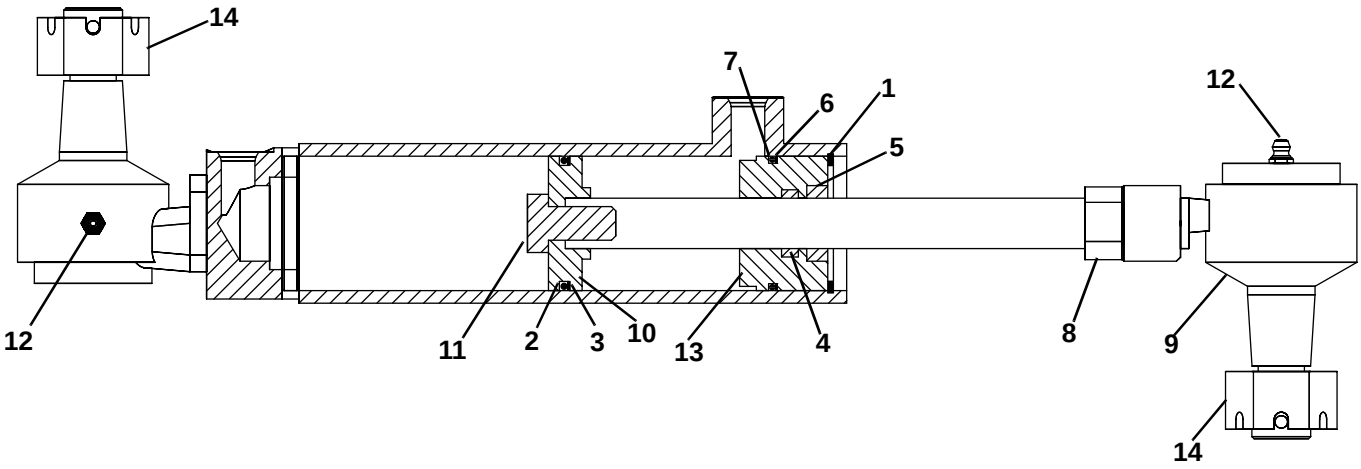
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5003634	1	Pad, Back	
2	5003635	1	Pad, Seat	
3	5003636	1	Arm Rest, Left Side	
4	5003637	1	Arm Rest, Right Side	
5	5003690	1	Adjuster Assembly	
6	554390	1	Seat Switch	**REFERENCE SW2, See 68.1**
7	3003928	1	Literature Pouch	
8	409757	2	Screw, Seat Switch	
9	5003769	1	Wire Assembly	

> Change from previous revision

Serial No. All

49.1 Steering Cylinder

Part No. 5003541



9016-64

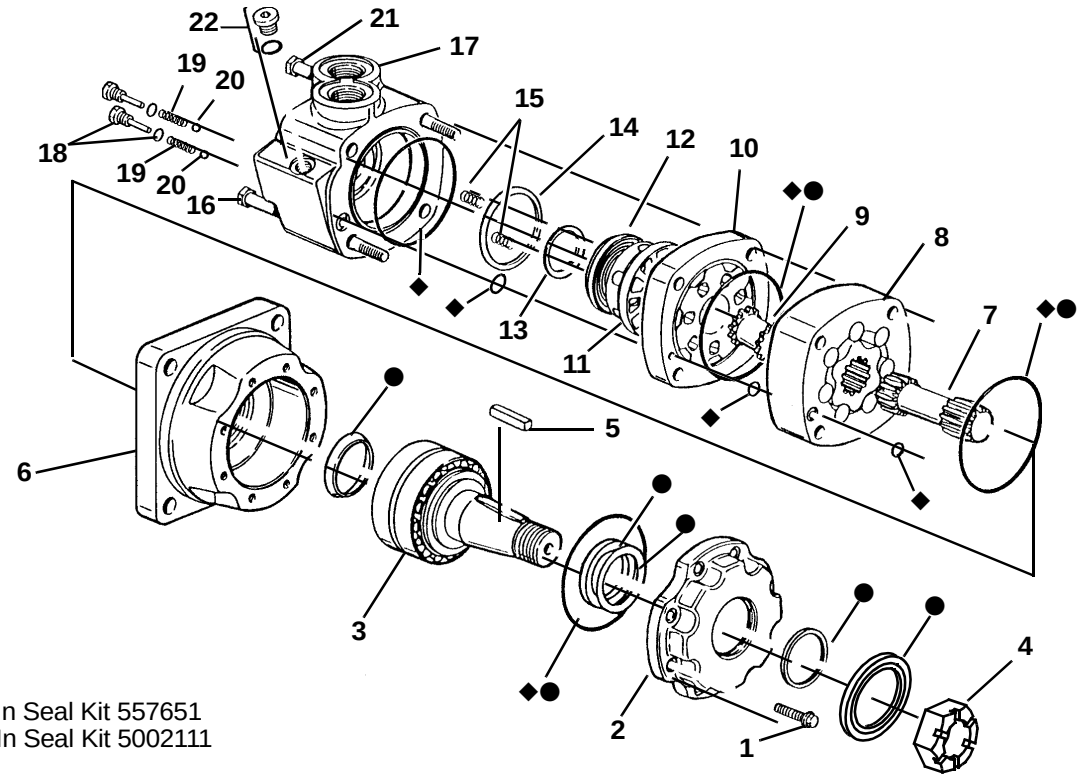
Item	Part No.	Qty.	Description	Serial Numbers/Notes
	5003542	1	Seal Kit	
1	N/S	1	• Retaining Ring	
2	N/S	1	• O-Ring, Piston	
3	N/S	1	• Seal, Piston	
4	N/S	1	• Seal, Rod	
5	N/S	1	• Wiper	
6	N/S	1	• Backup Ring, Gland	
7	N/S	1	• O-Ring, Gland	
8	443126	1	Nut, 5/8-11 Hex	
9	5003543	1	Socket Assembly	
10	N/S	1	Piston	
11	N/S	1	Screw, Piston	
12	471214	2	Grease Fitting	
13	N/S	1	Gland	
14	N/S	2	Nut, 7/8-14 Castle	

> Change from previous revision

50.1 Rear Wheel Motor

Serial No. All
Serial No. All

Part Number 5003540



◆ Included In Seal Kit 557651
● Included In Seal Kit 5002111

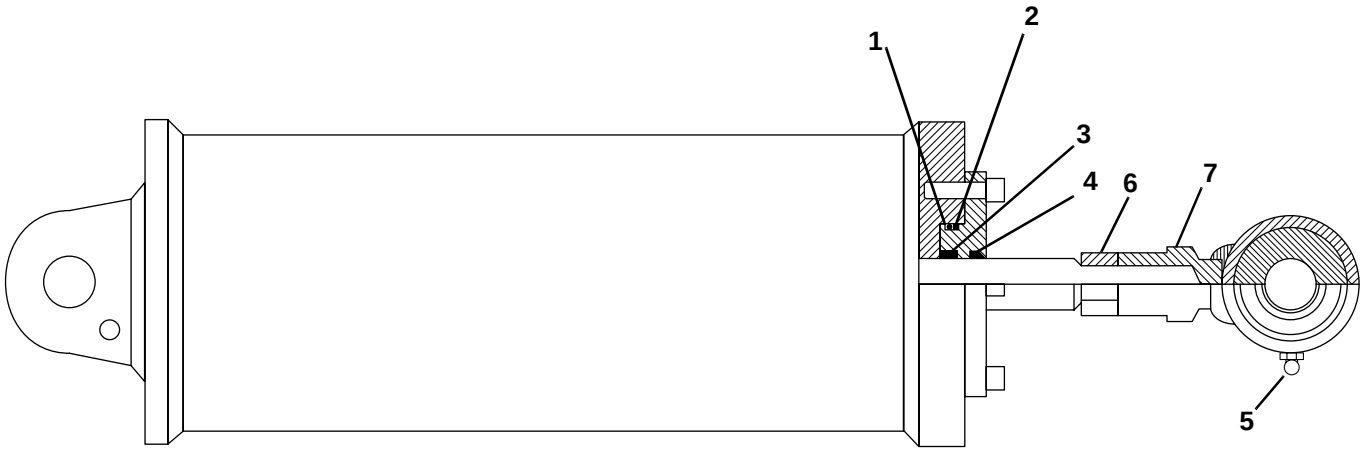
9016-46

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	558066	8	Screw, Torx	
2	5002110	1	Front Retainer	
3	558063	1	Shaft and Bearing Kit	
4	557624	1	Nut, Hex	
5	557623	1	Key	
6	558064	1	Bearing Housing	
7	557629	1	Drive	
8	5003590	1	Geroler	
9	557632	1	Drive, Valve	
10	557631	1	Plate, Valve	
11	557633	1	Valve	
12	557637	1	Balance Ring and Pins	
◆ 13	557634	1	Seal, Inner Face	
◆ 14	557635	1	Seal, Outer Face	
15	557636	2	Spring	
16	557650	3	Bolt, 5-3/4”	
17	5003591	1	Housing, Valve	
18	557639	2	Check Plug Assembly	
19	557642	2	Spring	
20	557640	2	Ball, Steel	
21	5000318	1	Bolt	
22	557641	1	Plug	

> Change from previous revision

51.1 Deck Return Canister

Part Number 5003371



9016-47

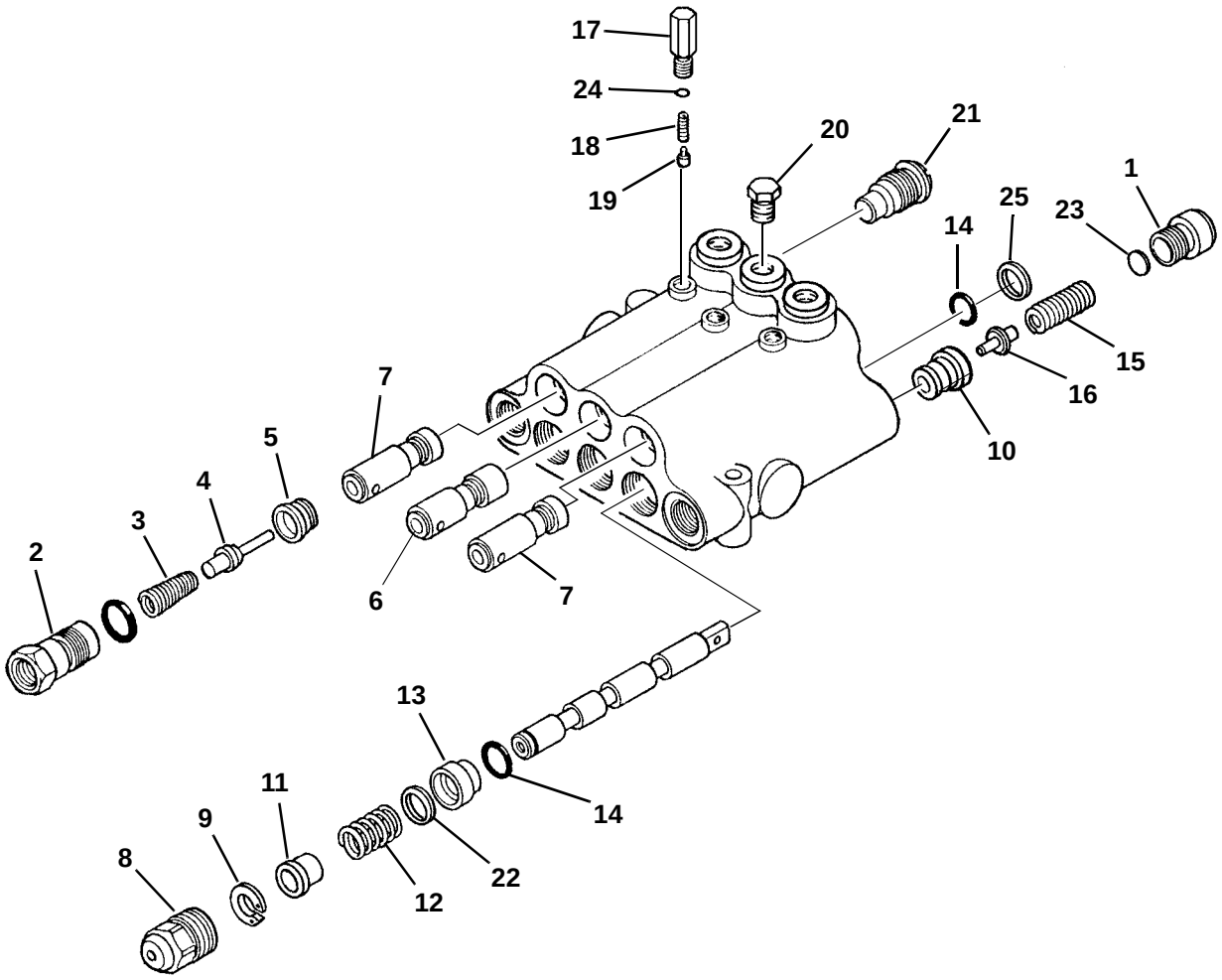
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	●	1	O-Ring	
2	●	1	Back Up Ring	
3	●	1	Loaded U-Cup	
4	●	1	Rod Wiper	
5	471214	1	Grease Fitting	
6	443132	1	Nut, 3/4-16 Hex	
7	5003428	1	Collar Assembly	
●	5003427	1	Seal Kit	Gold Star Return Canisters
●	5003662	1	Seal Kit	HDM Return Canisters

> Change from previous revision

Serial No. All

52.1 Lift Valve

Part Number 1001802



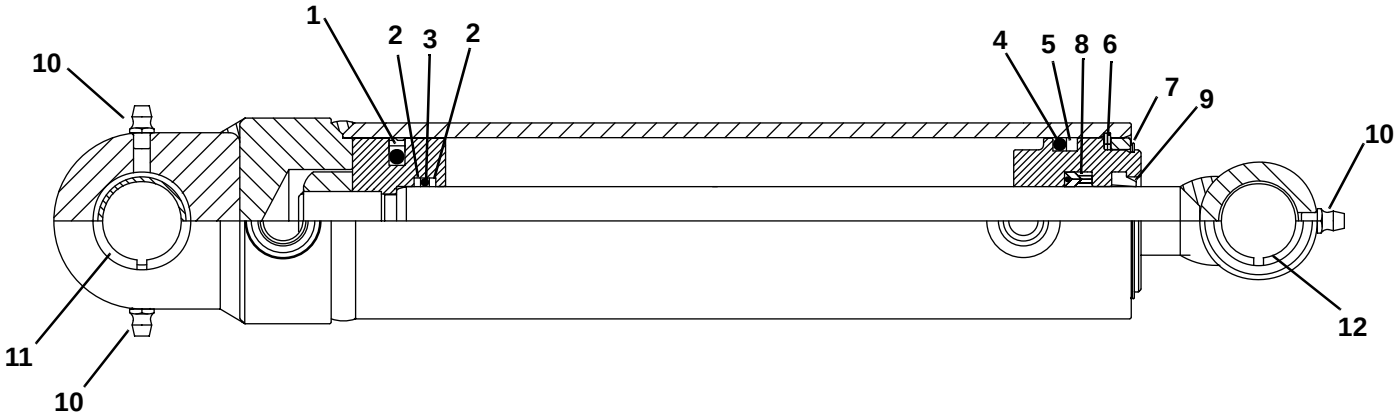
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	558005	1	Plug Assembly, Relief Valve	
2	500745	3	Plug Assembly, Port Adapter	
3	545914	3	Spring, Lockout	
4	■	3	Poppet Assembly	
5	500736	3	Seat Assembly	
6	5001599	1	Plunger, Lockout	
7	5001603	2	Plunger, Lockout	
8	558004	3	Cap Assembly	
9	558007	3	Retaining Ring	
10	5001613	1	Seat	
11	558011	3	Spacer	
12	5001616	3	Spring, Spool Centering	
13	545921	3	Bushing	
14	■	6	O-Ring	
15	5001614	1	Spring Relief Valve (Yellow)	
16	5001615	1	Poppet, Relief Valve	
17	◆	3	Plug Assembly, Plunger Detent	
18	◆	3	Spring, Detent	
19	◆	3	Plunger, Detent	
20	351122	3	Hex Plug Assembly	
21	500750	3	Plug Assembly	
22	558008	3	Washer	
23	545925	AR	Shim (.015 Thick)	
	545926	AR	Shim (.010 Thick)	
	545927	AR	Shim (.035 Thick)	
24	546112	AR	Disc, Plain	
25	5001617	3	Wiper Seal	
◆	5001612	1	Detent Reapir Kit	
■	558010	1	Seal Kit	

> Change from previous revision

53.1 Front Lift Cylinder

Serial No. All

Part Number 3006008



9016-49

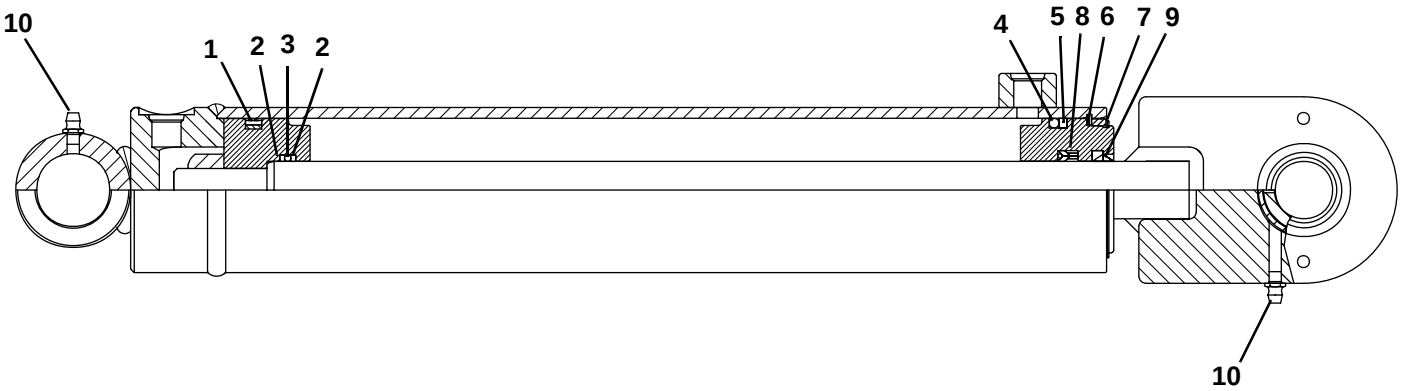
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	●	1	PSP Seal	
2	●	2	Back Up Ring	
3	●	1	O-Ring	
4	●	1	O-Ring	
5	●	1	Back Up Ring	
6	●	1	Internal Snap Ring	
7	●	1	External Snap Ring	
8	●	1	Loaded U-Cup	
9	●	1	Rod Wiper	
10	471214	3	Grease Fitting	
11	5003415	1	Bushing	
12	5003566	2	Bushing	
●	5003414	1	Seal Kit	Gold Star Cylinders
●	5003667	1	Seal Kit	HDM Cylinders

> Change from previous revision

Serial No. All

54.1 Wing Lift Cylinders

Part Number 3006249



9016-50

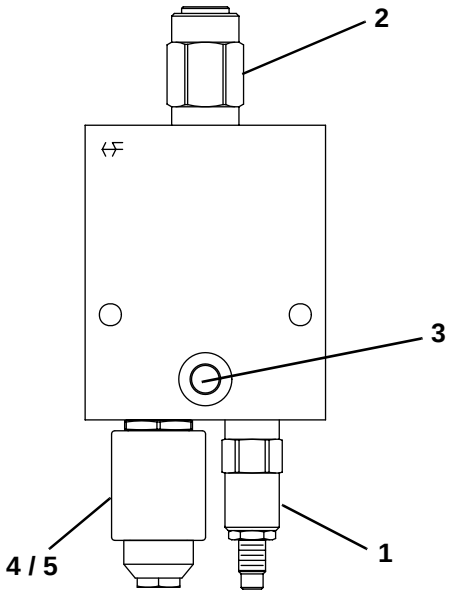
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	●	1	PSP Seal	
2	●	2	Back Up Ring	
3	●	1	O-Ring	
4	●	1	O-Ring	
5	●	1	Back Up Ring	
6	●	1	Internal Snap Ring	
7	●	1	External Snap Ring	
8	●	1	Loaded U-Cup	
9	●	1	Rod Wiper	
10	471214	2	Grease Fitting	
●	5003413	1	Seal Kit	Gold Star Cylinders
●	5003659	1	Seal Kit	HDM Cylinders

> Change from previous revision

55.1 Deck Valve

Serial No. All

Part Number 4135582



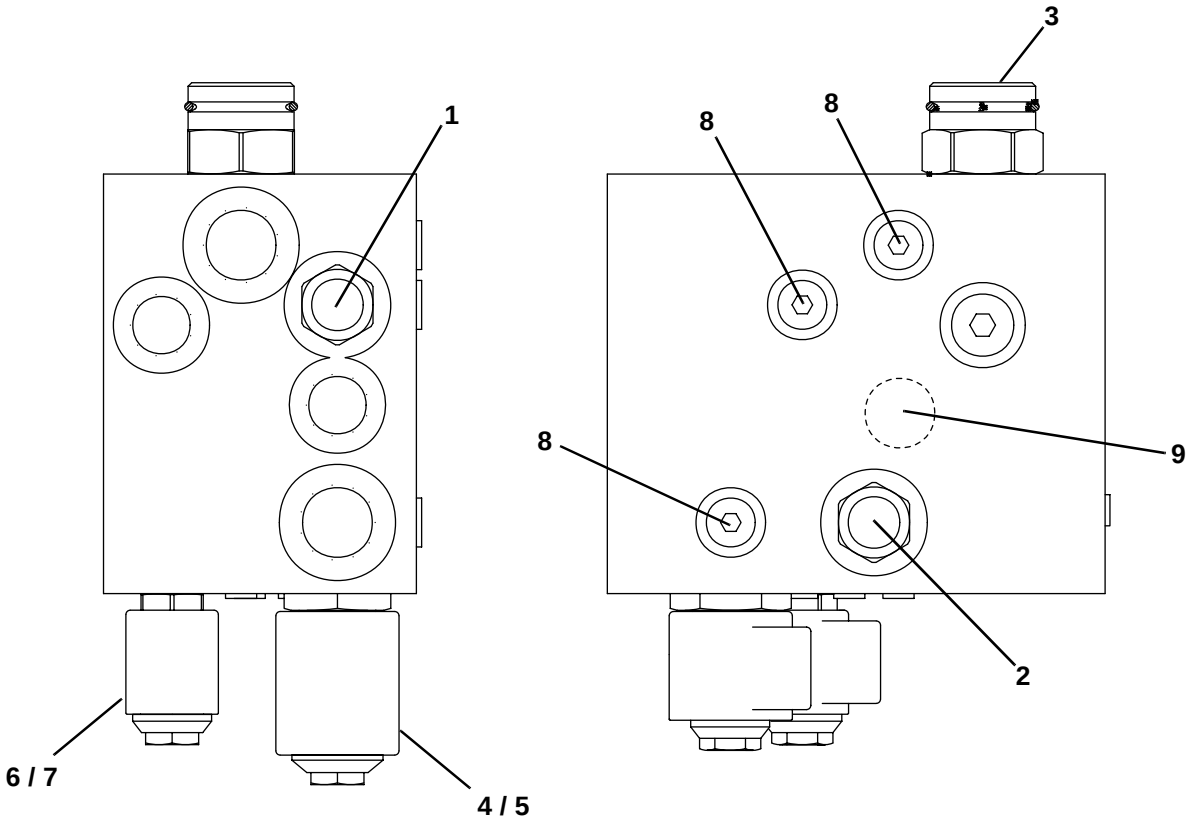
9016-51

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5002911	1	Relief Valve	
	5003579	1	• Seal Kit	
2	5002912	1	Relief Valve	
	5003554	1	• Seal Kit	
3	3010199	1	Plug, SAE #6	Located opposite Diagnostic port
	339897	1	• O-Ring	
4	5002913	1	Solenoid Valve	
	5003579	1	• Seal Kit	
5	4134530	1	Coil, 12 Volt DC	**REFERENCE SOL2, SOL3, SOL4, SOL8, See 68.1**

> Change from previous revision

56.1 4WD Valve

Part Number 4135556

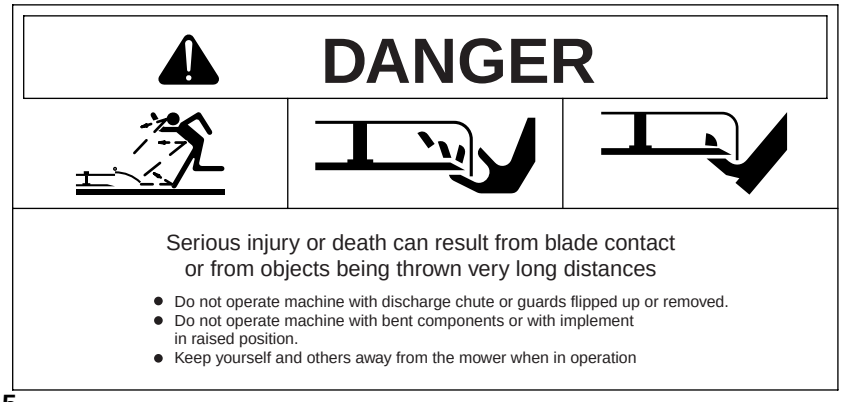


9016 52

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5003342	1	Check Valve	
	5003582	1	• Seal Kit	
2	5003344	1	Shuttle, Hot Oil	
	5003582	1	• Seal Kit	
3	5003346	1	3-Way Spool	
	5003583	1	• Seal Kit	
4	5003348	1	Solenoid Vlave	
	5003583	1	• Seal Kit	
5	4134530	1	Coil, 12 Volt DC	**REFERENCE SOL6 See 68.1**
6	5003350	1	Solenoid Valve	
	5003578	1	• Seal Kit	
7	4134532	1	Coil, 12 Volt DC	**REFERENCE SOL7 See 68.1**
8	5003353	3	Plug, SAE #6	
	339897	3	• O-ring	
9	5003353	1	Plug, Orifice	

> Change from previous revision

57.1 Decals - Decks

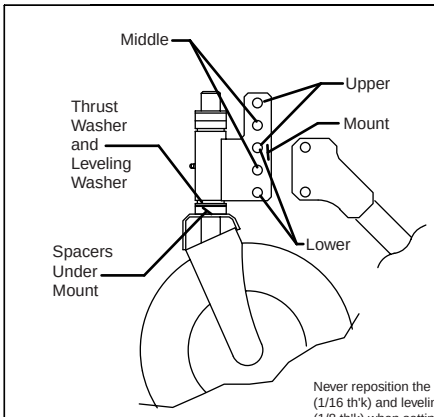

DANGER
Serious injury or death can result from blade contact
or from objects being thrown very long distances
Do not operate machine with discharge chute or guards flipped up or removed.
Do not operate machine with bent components or with implement in raised position.
Keep yourself and others away from the mower when in operation

5

Deck Flip Up Procedure

1. Rotate anti-sway mechanism downward. (Located under tractor floorboard)
2. Start tractor engine and raise deck until gage wheels are off the ground.
3. Remove cut height adjustment pins from rear gage wheel arms.
4. Raise deck to full raised position.
5. Turn tractor engine off.
6. Rotate front of deck upward until support is securely latched.

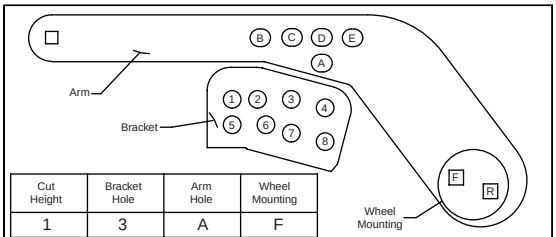
3



Cut Height	Mount Location	Number of Spacers Under Mount
1	Lower	0
1-1/2	Lower	1
2	Lower	2
2-1/2	Lower	3
2-1/2	Middle	0
3	Middle	1
3-1/2	Middle	2
4	Middle	3
4	Upper	0
4-1/2	Upper	1
5	Upper	2
5-1/2	Upper	3

Never reposition the thrust washer(s) (1/16 th'k) and leveling washer(s) (1/8 th'k) when setting cut height

1



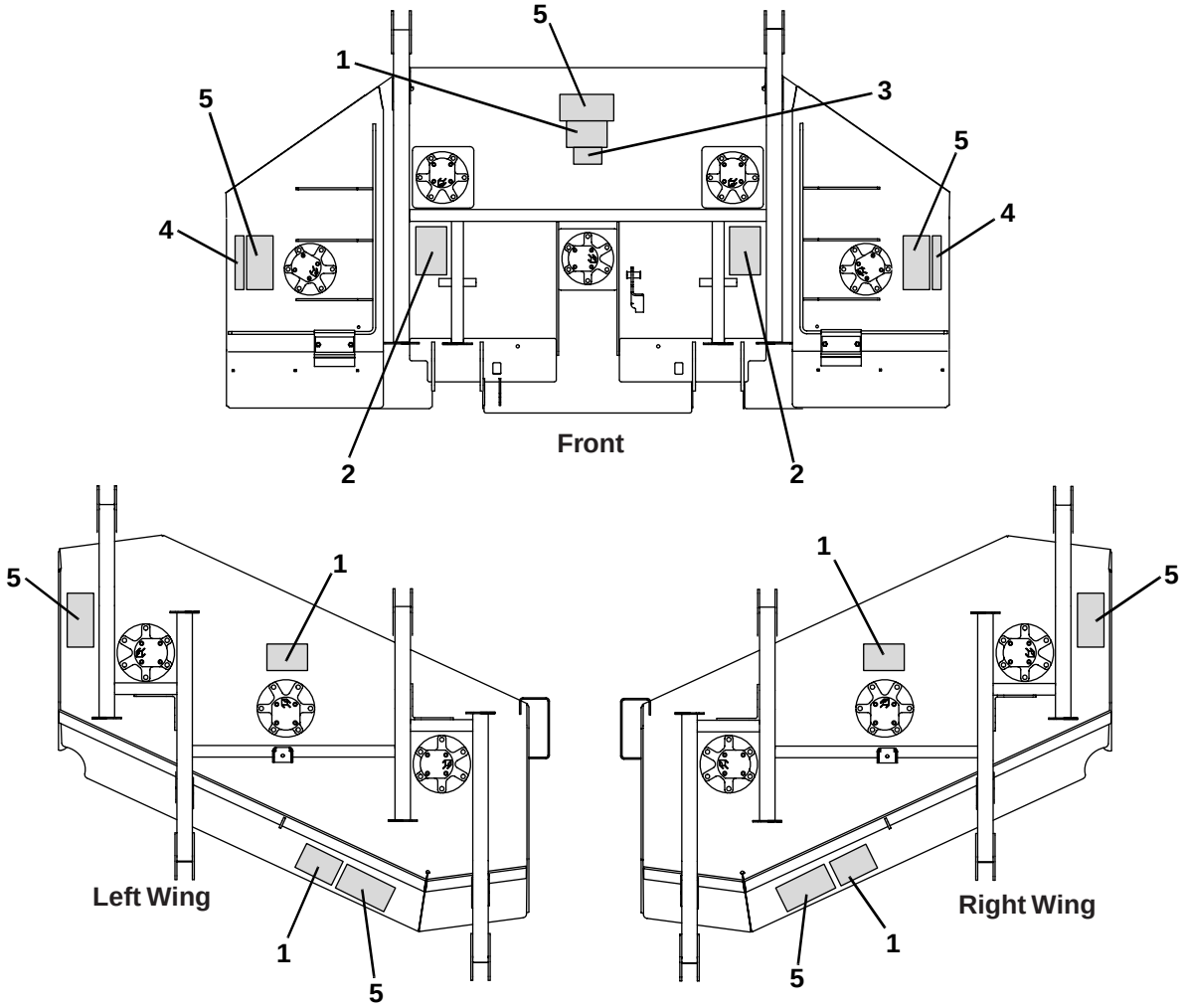
Cut Height	Bracket Hole	Arm Hole	Wheel Mounting
1	3	A	F
1-1/2	1	B	F
2	2	C	F
2-1/2	3	D	F
3	4	E	F
3-1/2	5	B	F
4	6	C	F
4-1/2	7	D	F
5	8	E	F
5-1/2	8	E	R

Wheel Mounting Instructions

1. While Roatating wheel, tighten nut until wheel is difficult to rotate.
2. Loosen nut 1/4 turn or just until wheel rotates freely.
3. Lock nut into place using second nut. Do not allow first nut to rotate when tighteneing second nut securely.
4. Rotate wheel to check for free rotation with zero end play.

2

4



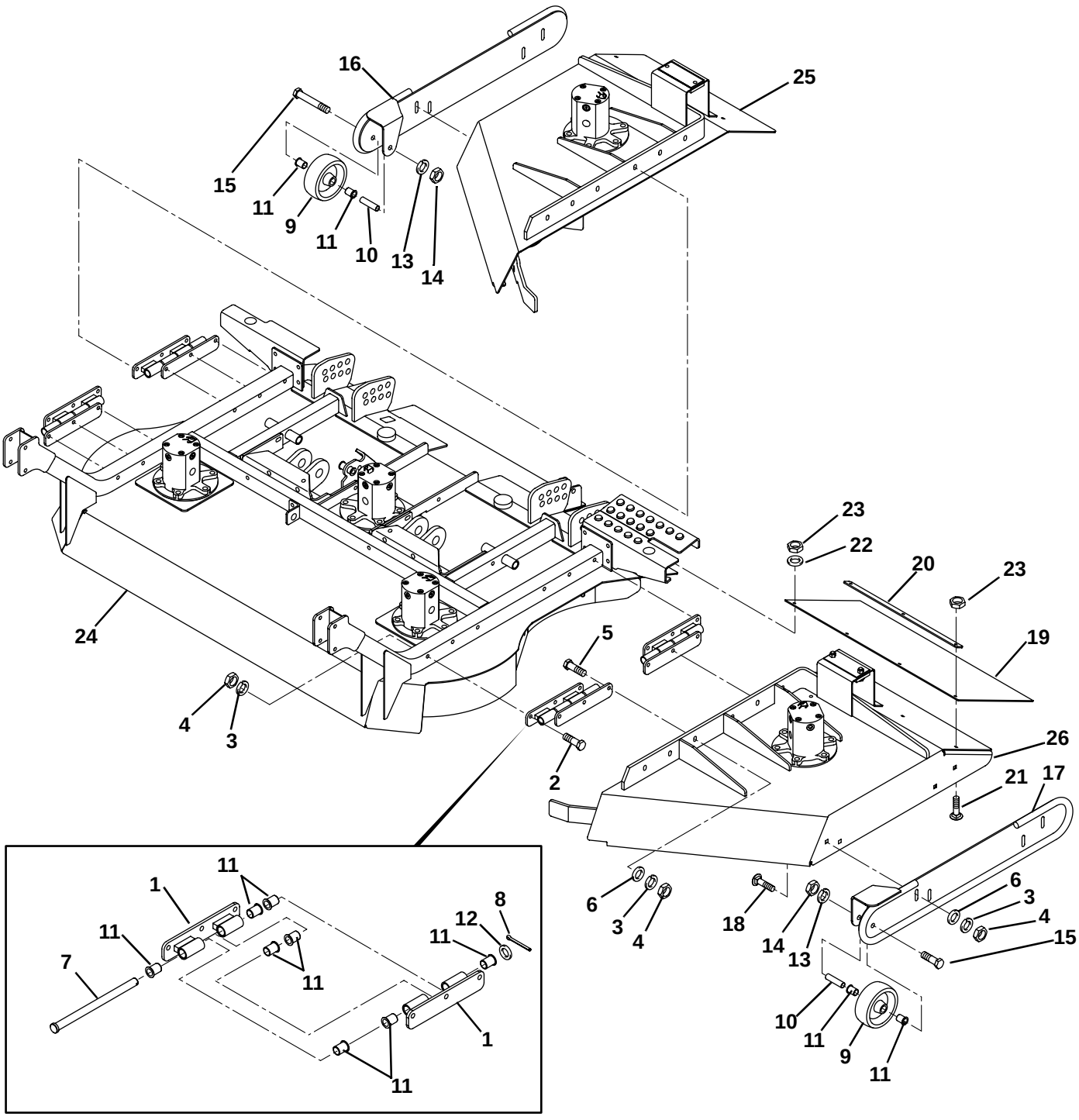
9016-63

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3009317	5	Decal, Caster Cut Height	
2	3009318	2	Decal, Gage Wheel Cut Height	
3	3009319	1	Decal, Flip Up Deck	
4	366609	2	Decal, No Step	
5	3002502	7	Decal, Danger	

> Change from previous revision

58.1 Front Deck

Serial No. All

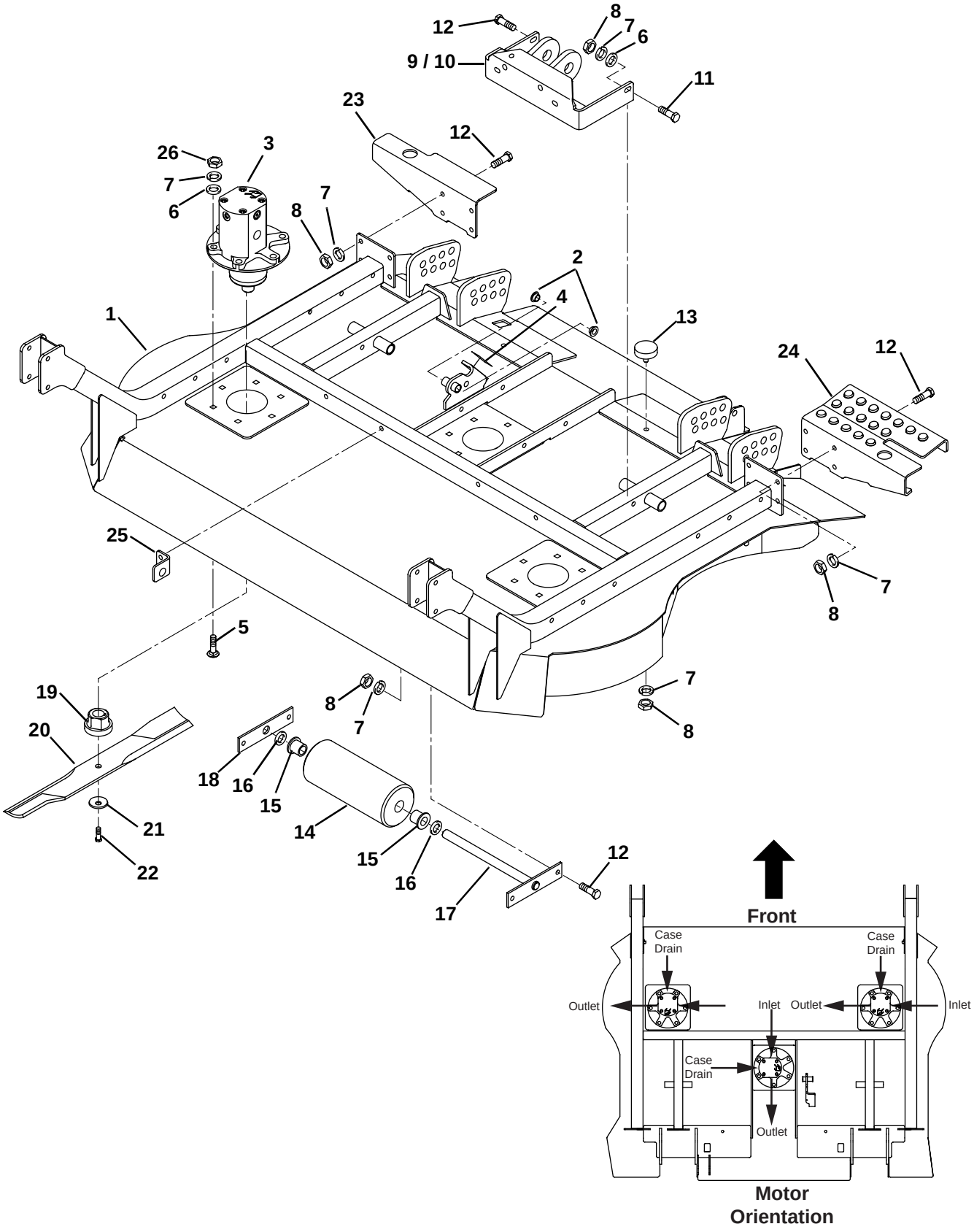


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1003430	8	Hinge Assembly	
2	400286	12	Screw, 3/8-16 x 2-3/4” Hex Head	
3	446142	32	Lockwasher, 3/8 Hvy	
4	444762	32	Locknut, 3/8-16 Center	
5	400264	12	Screw, 3/8-16 x 1-1/4” Hex Hd	
6	453011	20	Flat Washer, 3/8	
7	3007678	4	Pin, Clevis	
8	460050	4	Cotter Pin, 3/16 x 1-1/4”	
9	3003939	2	Wheel, Deck	
10	3003714	2	Spacer, Wheel	
11	3004113	36	Bushing	
12	453020	4	Flat Washer, 5/8	
13	446152	2	Lockwasher, 1/2	
14	444758	2	Locknut, 1/2-13 Center	
15	400420	2	Screw, 1/2-13 x 3-1/2” Hex Head	
16	1003325	1	Skid Assembly, Anti Scalp	
17	1003321	1	Skid Assembly, Anti Scalp	
18	441624	8	Carriage Bolt, 3/8-16 x 1”	
19	3008840	2	Flap, Rear	
20	3009175	2	Hold Down, Drag Flap	
21	441606	8	Carriage Bolt, 1/4-20 x 3/4”	
22	452004	2	Flat Washer, 1/4	
23	444708	8	Locknut, 1/4-20 Center	
24	–	1	Front Deck Center Section	See 59.1
25	–	1	Right Side Winglet	See 60.1
26	–	1	Left Side Winglet	See 60.1

> Change from previous revision

59.1 Front Deck Center Section

Serial No. All



9016-56

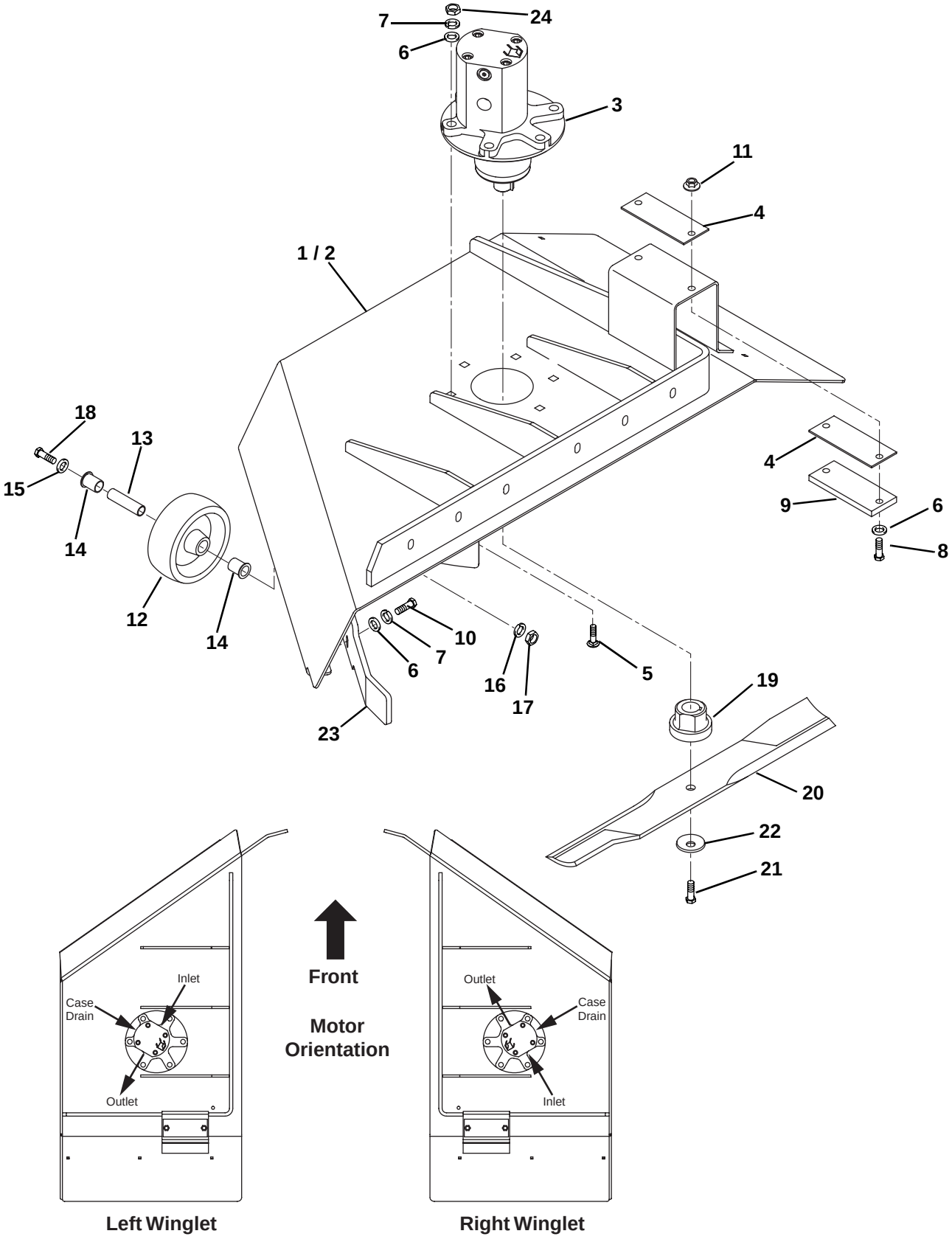
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5003188	1	Deck, Front Assembly	
2	352936	2	• Bushing	
3	2810069	3	Motor, Spindle Assembly	
	5003763	1	• Seal Kit	
4	REF	1	Serial Plate, Front Deck	
5	440124	18	Carriage Bolt, 3/8-16 x 1-3/4”	
6	453011	26	Flat Washer, 3/8	
7	446142	40	Lockwasher, 3/8 Hvy	
8	444762	22	Locknut, 3/8-16 Center	
9	1003424	1	Bracket Assembly, RH	
10	1003425	1	Bracket Assembly, LH	
11	400274	6	Screw, 3/8-16 x 2-1/2” Hex Head	
12	400262	14	Screw, 3/8-16 x 1” Hex Head	
13	361723	2	Stop, Rubber	
14	163302	1	Roller	
15	552824	2	• Bushing	
16	455048	2	Flat Washer, 3/4	
17	1003429	1	Shaft Assembly, Roller	
18	3007374	1	Plate, Shaft Support	
19	3008388	3	Adapter, Blade	
20	2810030	3	Bar, Rotary Mower Cutter	Models 70528 & 70529
20	4119024	3	Bar, Rotary Mower Cutter	Model 70530 Only
21	3007764	3	Washer, Blade	
22	400410	3	Screw, 1/2-13 x 1-3/4” Hex Head	
23	3007368	1	Arm, Winglet Support	
24	3007369	1	Arm, Winglet Support	
25	2810195	1	Angle, Bulkhead	
26	443110	18	Nut, 3/8-16 Hex	

> Change from previous revision

Serial No. All

60.1 Front Deck Winglets

(Right Winglet Shown)



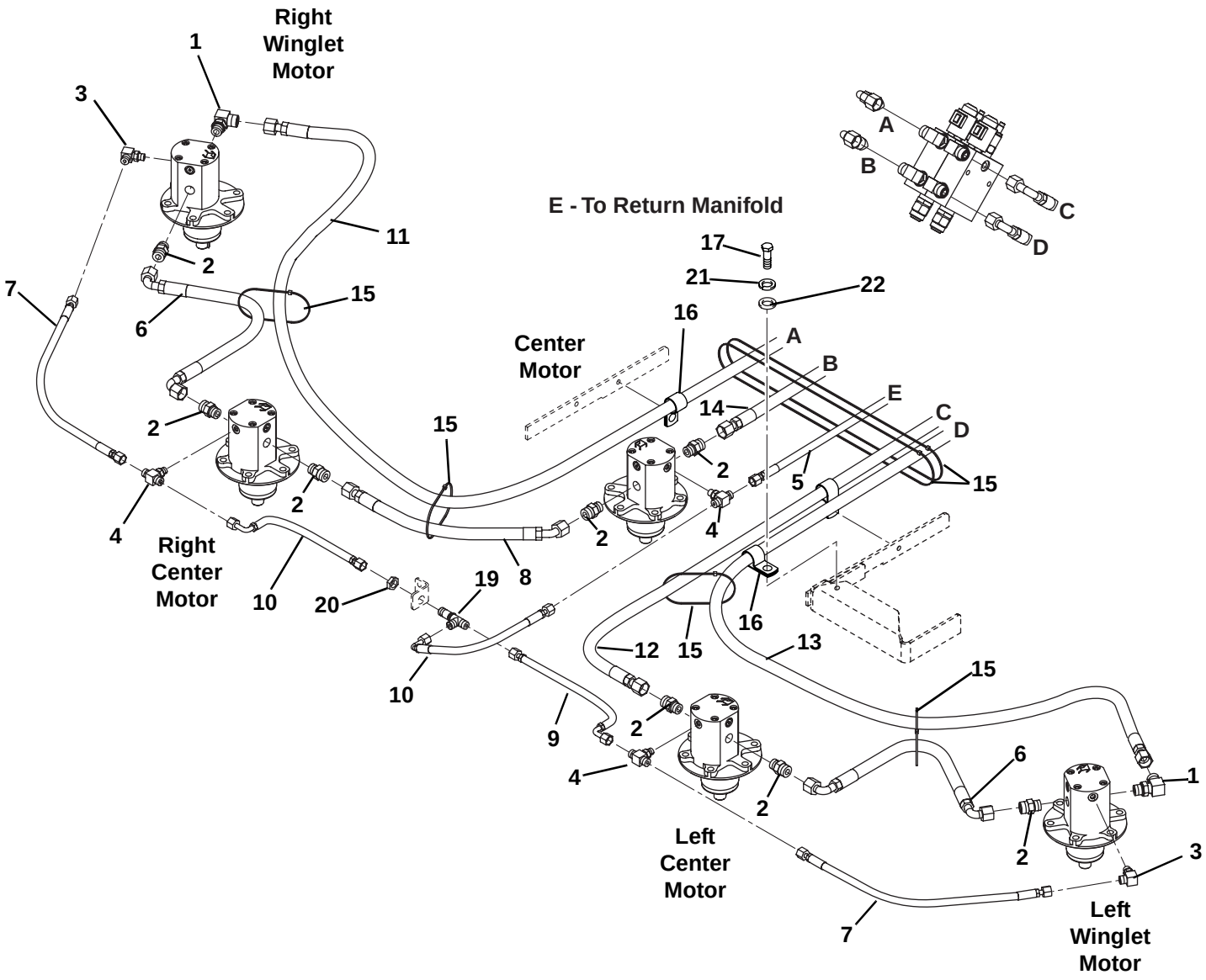
9016-55

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5003186	1	Deck, RH Winglet	
2	5003187	1	Deck, LH Winglet	
3	2810069	2	Motor, Spindle Assembly	
	5003763	1	• Seal Kit	
4	366613	4	Shim	
5	440124	12	Carriage Bolt, 3/8-16 x 1-3/4”	
6	453011	24	Flat Washer, 3/8	
7	446142	20	Lockwasher, 3/8 Hvy	
8	400264	4	Screw, 3/8-16 x 1-1/4” Hex head	
9	366473	2	Bumper, Arm	
10	400262	8	Screw, 3/8-16 x 1” Hex Head	
11	444762	4	Locknut, 3/8-16 Center	
12	3003939	2	Wheel, Deck	
13	3003714	2	Spacer, Wheel	
14	3004113	4	Bushing	
15	455012	2	Flat Washer, 1/2	
16	446152	2	Lockwasher, 1/2	
17	444758	2	Locknut, 1/2-13 Center	
18	400420	2	Screw, 1/2-13 x 3-1/2” Hex Head	
19	3008388	2	Adapter, Blade	
20	2810030	2	Bar, Rotary Mower Cutter	Models 70528 & 70529
20	4119024	2	Bar, Rotary Mower Cutter	Model 70530 Only
21	400410	2	Screw, 1/2-13 x 1-3/4”Hex Head	
22	3007764	2	Washer, Blade	
23	3007376	2	Arm, Winglet Support, Front	
24	443110	12	Nut, 3/8-16 Hex	

> Change from previous revision

61.1 Front Deck Hydraulics

Serial No. All



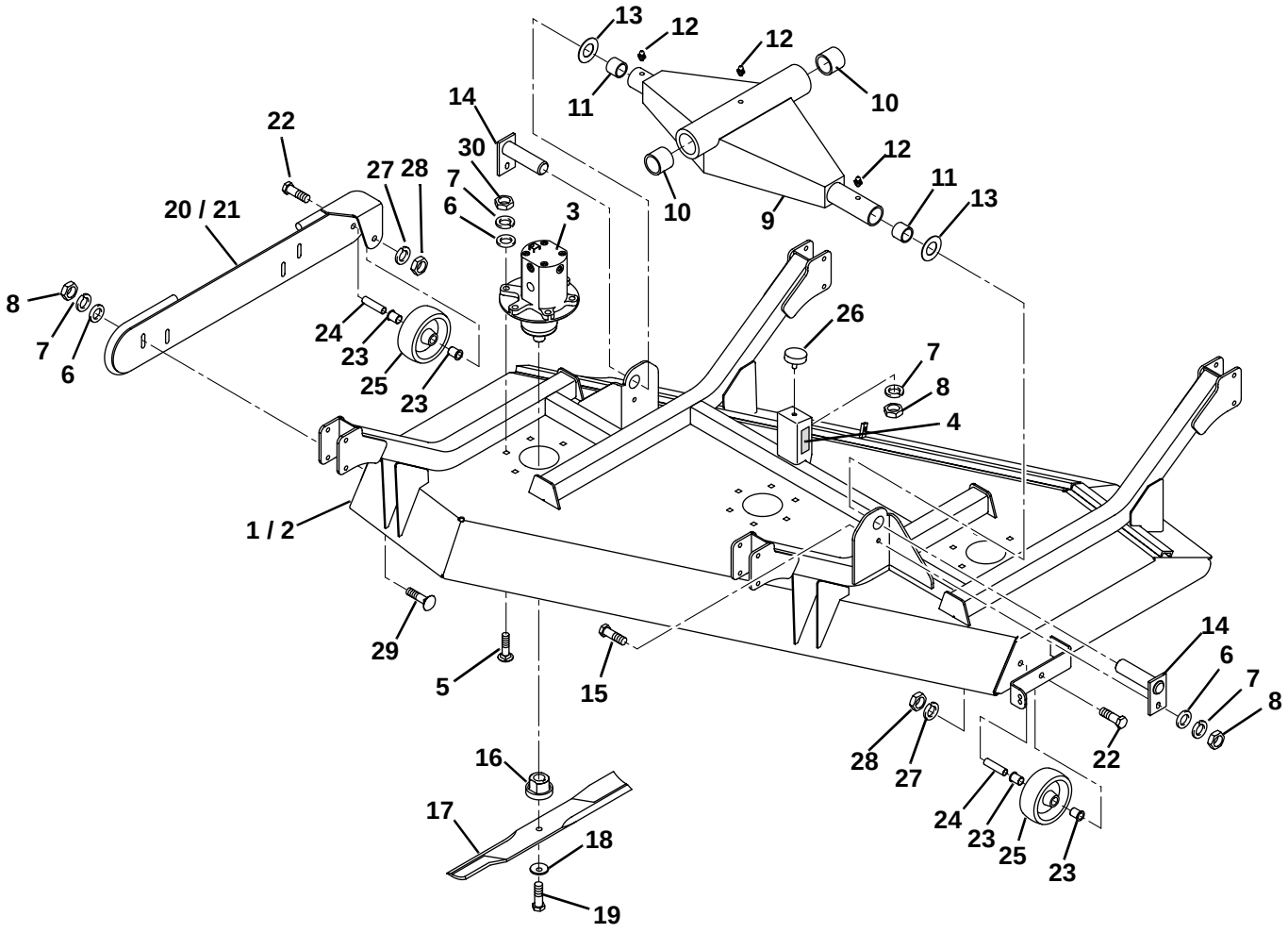
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	340070	2	Adapter, 90°	
2	339989	8	Adapter, Straight	
3	340055	2	Adapter, 90°	
4	340095	3	Adapter, Tee	
5	REF	1	Hose, Front Deck Motor Case Drain	See 39.1
6	1003557	2	Hose, Winglet	
7	2810190	2	Hose, Winglet Motor Drain	
8	1003607	1	Hose, Left Center to Center Motor	
9	2810189	1	Hose, Tee to Left Center Motor Drain	
10	2810191	2	Hose, Right Center and Center Drain	
11	1003559	1	Hose, Right Valve to Right Winglet	
12	1003556	1	Hose, Left Valve to Left Center	
13	1003558	1	Hose, Left Winglet to Left Valve	
14	1003562	1	Hose, Center Motor to Right Valve	
15	473144	6	Tie Wrap	
16	363514	3	Clamp, 1-1/8” Diameter	
17	400188	3	Screw, 5/16-18 x 1” Hex Head	
18	443106	2	Nut, 5/16-18 Hex	
19	340214	1	Adapter, Bulkhead Tee	
20	339960	1	Locknut, Bulkhead	
21	446134	3	Lockwasher, 5/16	
22	453009	1	Flat Washer, 5/16	

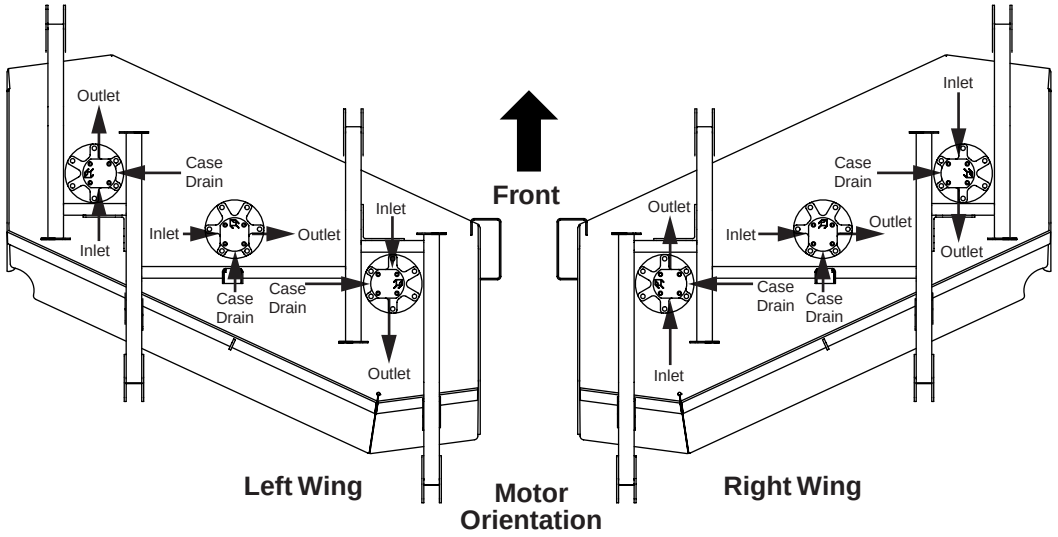
> Change from previous revision

Serial No. All

62.1 Wing Decks

Right Wing Shown



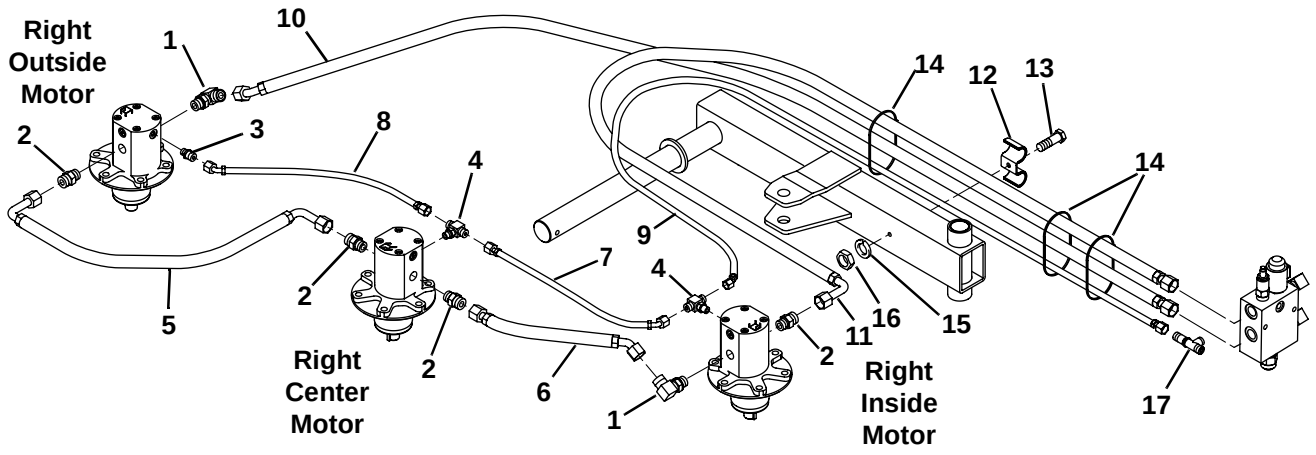


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5003190	1	Deck, Right Wing	
2	5003189	1	Deck, Left Wing	
3	2810069	6	Motor, Spindle Assembly	
	5003763	1	• Seal Kit	
4	REF	2	Wing Deck Serial Plate	
5	440124	36	Carriage Bolt, 3/8-16 x 1-3/4”	
6	453011	48	Flat Washer, 3/8	
7	446142	50	Lockwasher, 3/8 Hvy	
8	444762	14	Locknut, 3/8-16 Center	
9	116686	2	Deck Mount Assembly	
10	363574	4	• Bushing	
11	363562	4	• Bushing	
12	471214	6	Fitting, Grease 1/4-28	
13	363568	4	Washer, Thrust	
14	163306	4	Pin Assembly	
15	400264	4	Screw, 3/8-16 x 1-1/4” Hex Head	
16	3008388	6	Adapter, Blade	
17	2810030	6	Bar, Rotary Mower Cutter	Models 70528 & 70529
17	4119024	6	Bar, Rotary Mower Cutter	Model 70530 Only
18	3007764	6	Washer, Blade	
19	400410	6	Screw, 1/2-13 x 1-3/4” Hex Head	
20	1003321	1	Skid, Right Wing Anti-Scalp	
21	1003325	1	Skid, Left Wing Anti Scalp	
22	400420	4	Screw, 1/2-13 x 3-1/2” Hex Head	
23	3004113	8	Bushing	
24	3003714	4	Spacer, Wheel	
25	3003939	4	Wheel, Deck	
26	361723	2	Stop, Rubber	
27	446152	4	Lockwasher, 1/2	
28	444758	4	Locknut, 1/2-13 Center	
29	441624	8	Carriage Bolt, 3/8-16 x 1”	
30	443110	36	Nut, 3/8-16 Hex	

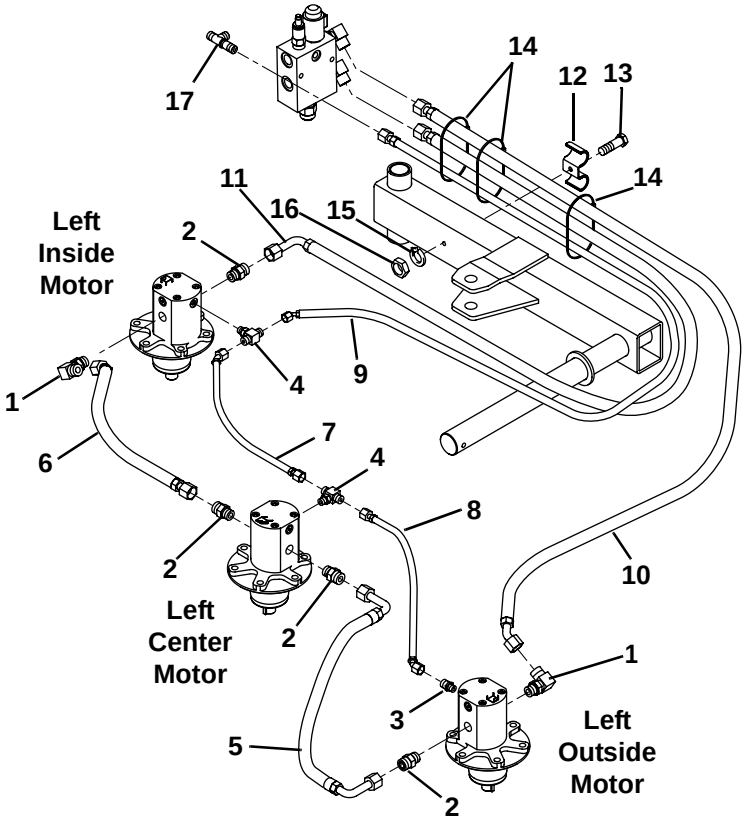
> Change from previous revision

63.1 Wing Deck Hydraulics

Serial No. All



Right Wing Deck Hydraulics



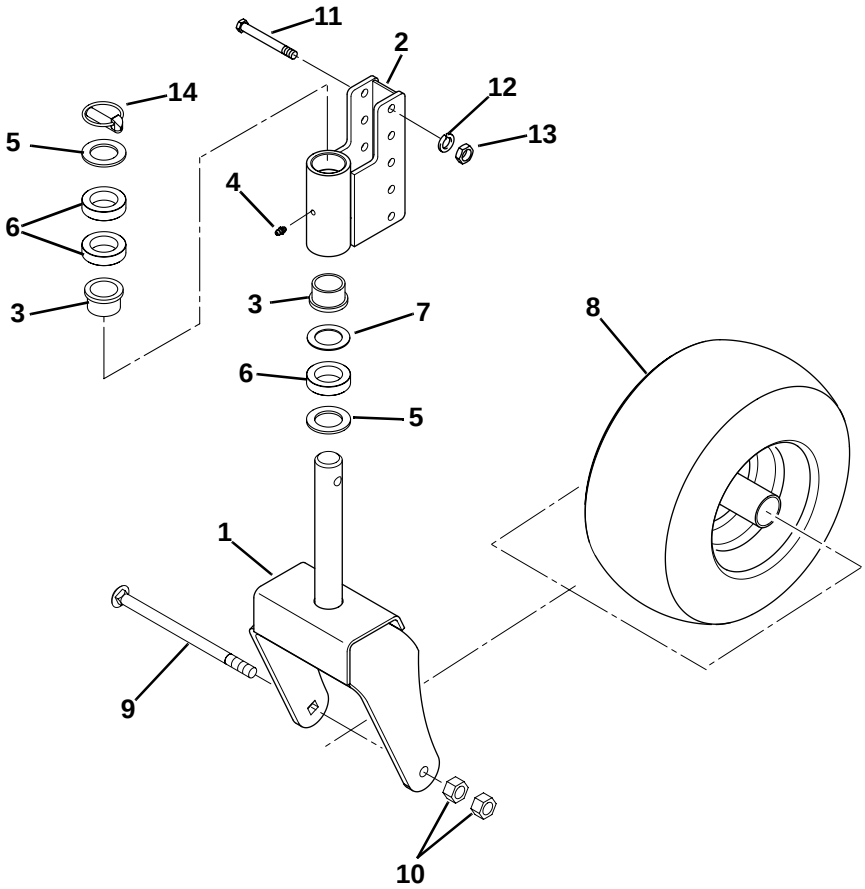
Left Wing Deck Hydraulics

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	340070	4	Adapter, 90°	
2	339989	8	Adapter, Straight	
3	339972	2	Adapter, Straight	
4	340095	4	Adapter, Tee	
5	1003580	2	Hose, Outside to Center Motor	
6	1003579	2	Hose, Inside to Center Motor	
7	2810194	2	Hose, Center to Inside Motor Drain	
8	2810193	2	Hose, Outside to Center Motor Drain	
9	2810192	2	Hose, Wing Motor Drain to Tee	
10	1003584	2	Hose, Wing Motor Pressure	
11	1003583	2	Hose, Wing Motor Return	
12	359860	2	Clamp, Hose	
13	400206	2	Screw, 5/16-18 x 4” Hex Head	
14	473144	6	Tie Wrap	
15	446136	2	Lockwasher, 5/16 Heavy	
16	443106	2	Nut, 5/16-18 Hex	
17	REF	2	Adapter, Bulkhead Tee	See 39.1

> Change from previous revision

64.1 Caster Assemblies

Serial No. All



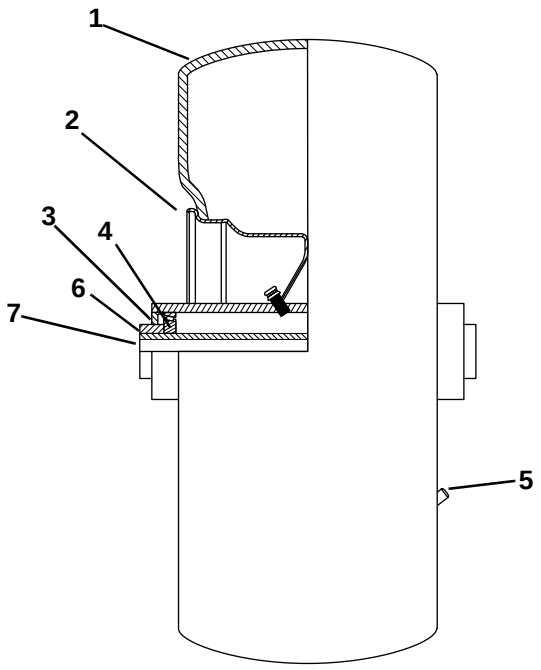
9016-62

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1004276	8	Yoke, 11” Tire	Wing Decks Only
1	1004275	2	Yoke, 13” Tire	Front Deck Only
2	1004277	10	Tube, Yoke Pivot	
3	363539	2	• Bushing	
4	471214	1	• Grease Fitting	
5	366593	20	Spacer, Caster Wheel	
6	365772	30	Spacer, Caster Wheel	
7	361648	10	Washer, Thrust	
8	1004023	8	Wheel and Tire, 11”	Wing Decks Only, See 65.1
8	1004024	2	Wheel and Tire, 13”	Front Deck Only, See 65.1
9	441690	8	Carriage Bolt, 1/2-13 x 7”	Wing Decks Only
9	441689	2	Carriage Bolt, 1/2-13 x 8-1/2”	Front Deck Only
10	443118	20	Nut, 1/2-13 Hex	
11	401028	20	Screw, 3/8-16 x 3-1/4” Hex Head	
12	446142	20	Lockwasher, 3/8 Heavy	
13	443110	20	Nut, 3/8-16 Hex	
14	3004894	10	Pin, Klik Type	

> Change from previous revision

65.1 Wheel and Tire Assemblies

Part Numbers 1004023 and 1004024



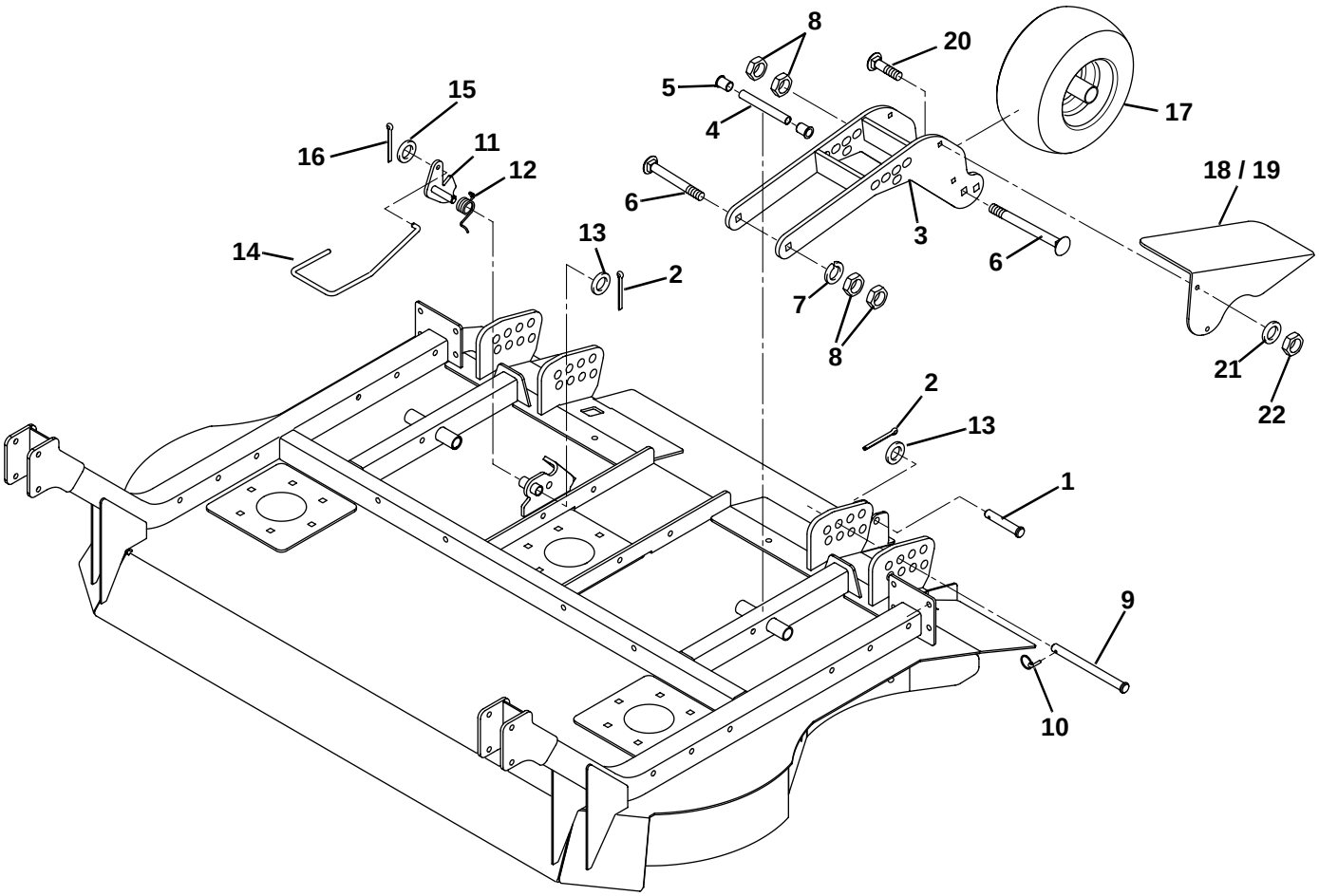
9016-61

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	550346	1	Tire, 11 x 4-5 Smooth	1004023 Only
1	5003200	1	Tire, 13 x 6.5-6 Multi Rib	1004024 Only
2	5003196	1	Wheel	1004023 Only
2	5003201	1	Wheel	1004024 Only
3	5003197	2	Grease Seal	
4	5003198	2	Bearing Cone	
5	360111	1	Inflation Valve	
6	346883	2	Spacer	
7	5003199	1	Spacer	1004023 Only
7	5003202	1	Spacer	1004024 Only

> Change from previous revision

66.1 Gage Wheels and Latch

Serial No. All

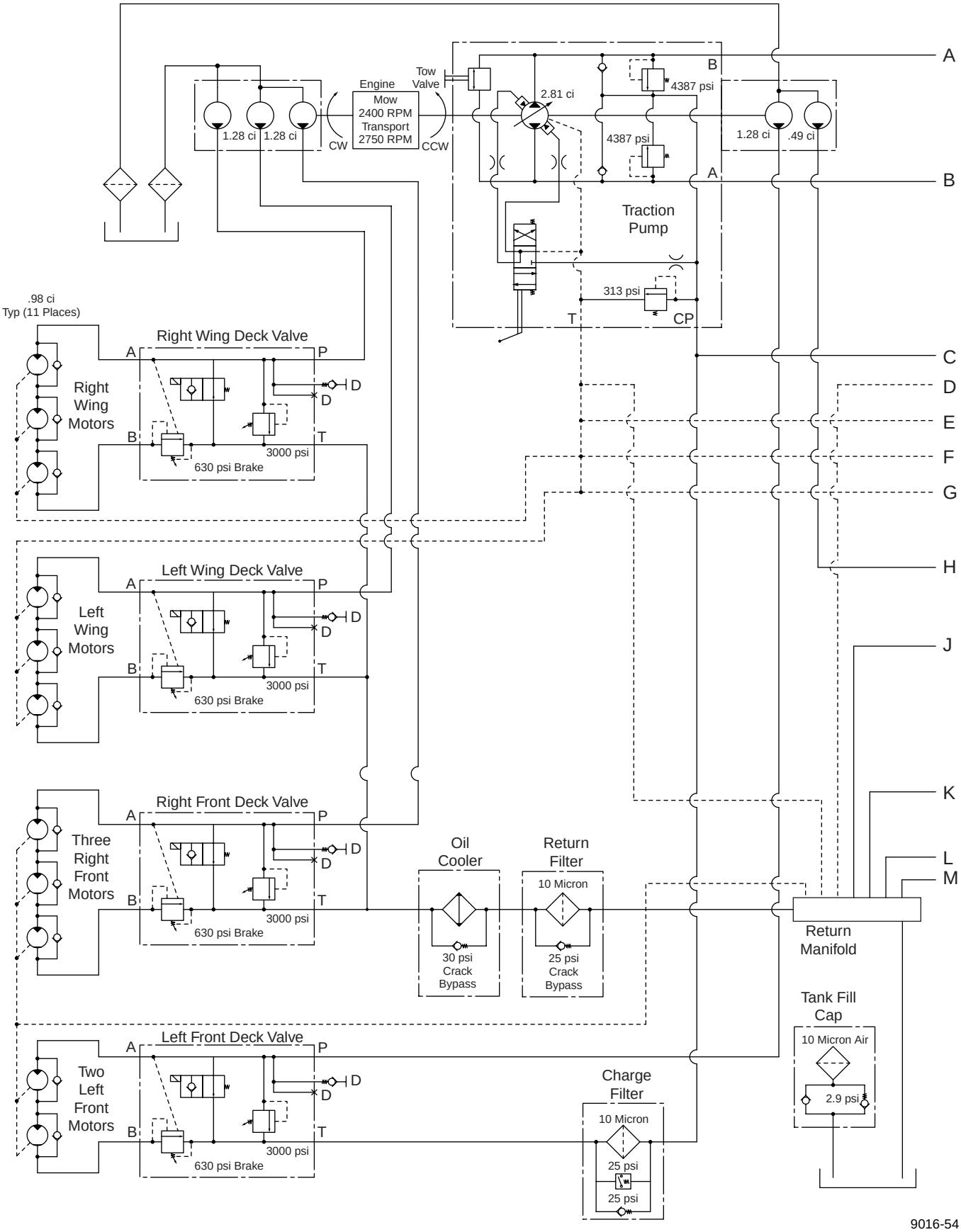


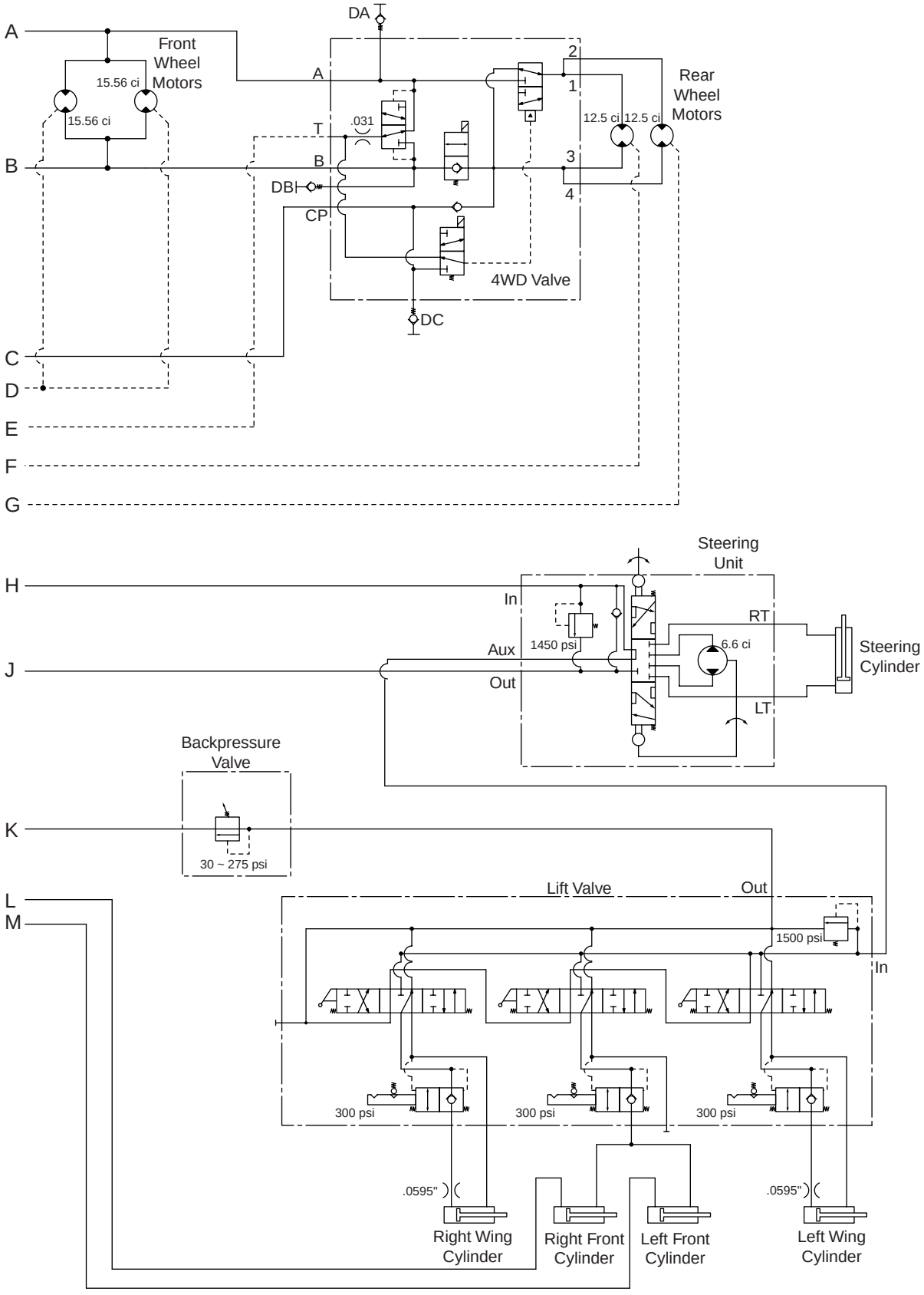
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	461495	1	Clevis pin, 1/2 x 2-1/2”	
2	460028	2	Cotter Pin, 1/8 x 1”	
3	1003423	2	Yoke, Gage Wheel	
4	3007442	2	Spacer, Arm Pivot	
5	3004113	4	Bushing	
6	441690	4	Carriage Bolt, 1/2-13 x 7”	
7	446152	2	Lockwasher, 1/2	
8	443118	8	Nut, 1/2-13 Hex	
9	3007679	2	Clevis Pin, 5/8 x 9-5/16”	
10	342675	2	Snap Ring	
11	1003902	1	Latch, Standup	
12	3008471	1	Spring, Torsion	
13	453017	1	Flat Washer, 1/2	
14	3008478	1	Rod, Latch	
15	453009	1	Flat Washer, 5/16	
16	460014	1	Cotter Pin, 3/32 x 3/4”	
17	1004023	2	Wheel and Tire, 11”	See 65.1
18	3010075	1	Deflector, Left Side Grass	
19	3010074	1	Deflector, Right Side Grass	
20	441614	4	Carriage Bolt, 5/16-18 x 1”	
21	452006	4	Flat Washer, 5/16	
22	444718	4	Locknut, 5/16-18 Center	

> Change from previous revision

Serial No. All

67.1 Hydraulic Schematic

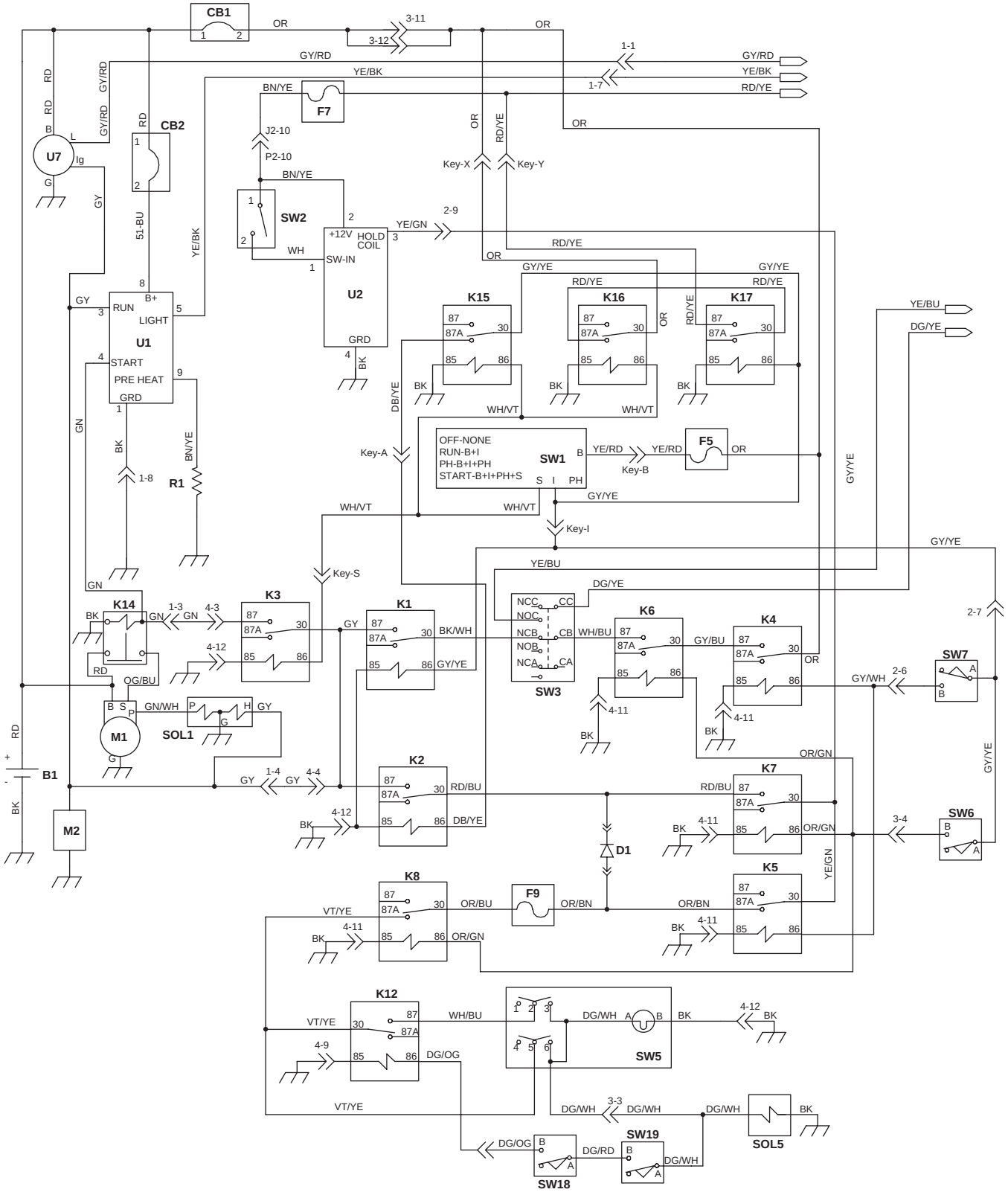



A
B
C
D
E
F
G
H
J
K
L
M
DA
Front
Wheel
Motors
15.56 ci
15.56 ci
A
T
B
DB
CP
.031
2
1
3
4
Rear
Wheel
Motors
12.5 ci
12.5 ci
4WD Valve
DC
Steering
Unit
In
Aux
Out
1450 psi
RT
LT
6.6 ci
Steering
Cylinder
Backpressure
Valve
30 ~ 275 psi
Lift Valve
Out
1500 psi
In
300 psi
300 psi
300 psi
.0595"
.0595"
Right Wing
Cylinder
Right Front
Cylinder
Left Front
Cylinder
Left Wing
Cylinder

Serial No. All

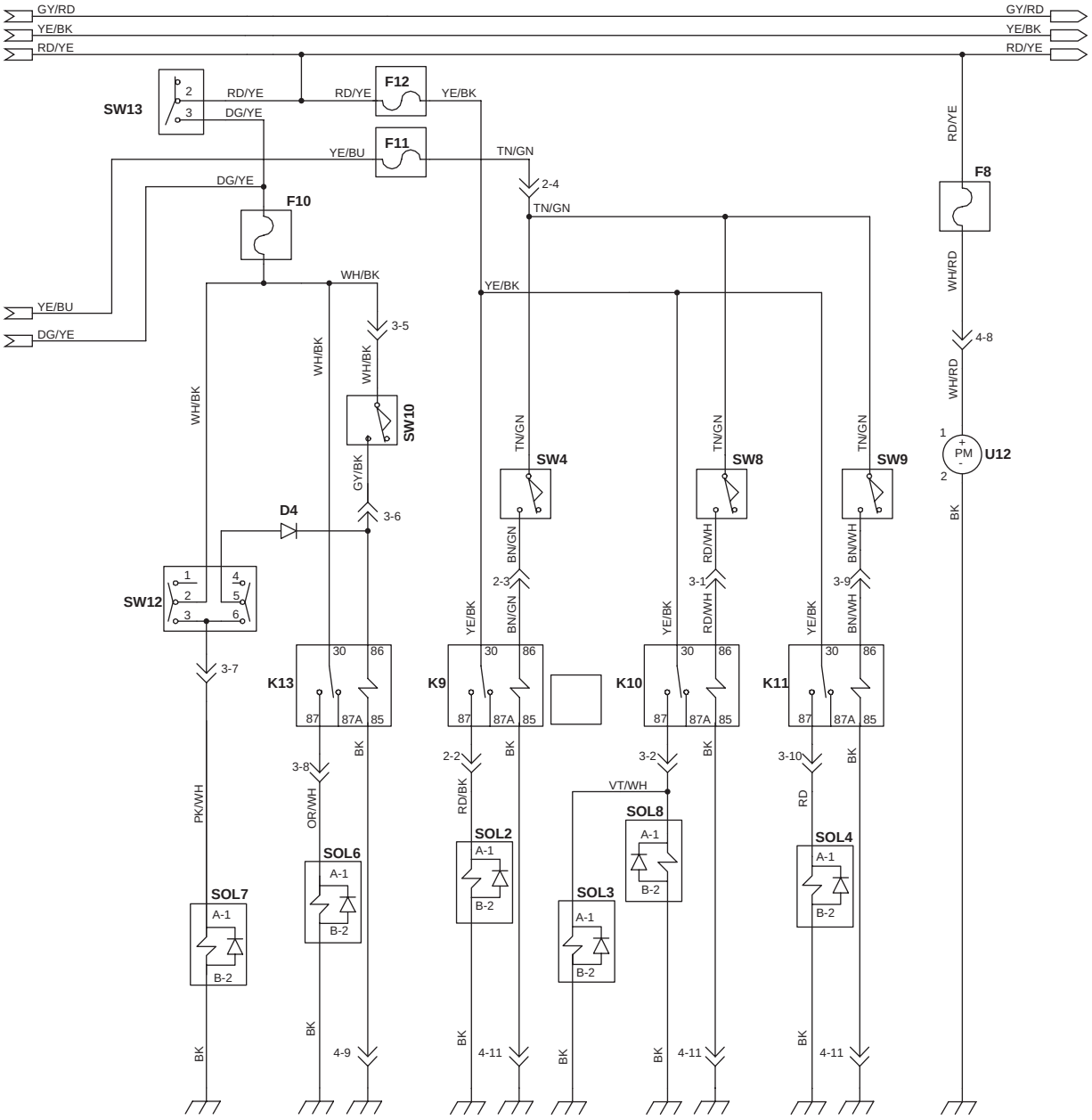
68.1 Electrical Schematic

Interlock, Starting, Charging and Cruise Control Circuits



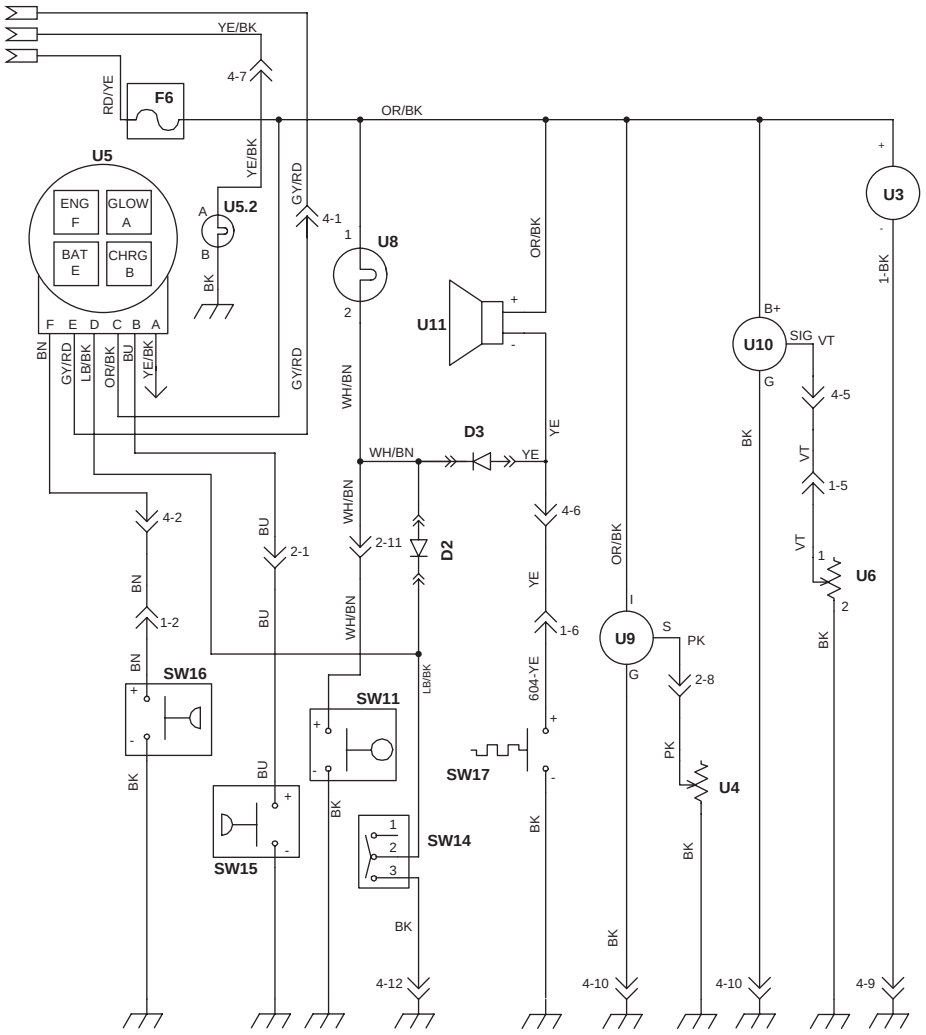
68.1 Electrical Schematic

4WD, Mow and Seat Control Circuits



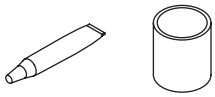
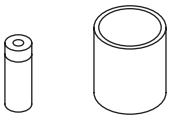
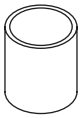
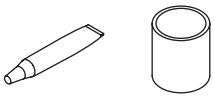
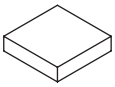
68.1 Electrical Schematic

Gauges and Warning Lights



Item	Reference Illustration	Part Number	Description	Serial Numbers/Notes
B1	**See 16.1**	4108140	Battery	
CB1	**See 44.1**	3000359	50 Amp Circuit Breaker - Main	
CB-2	**See 44.1**	3000359	50 Amp Circuit Breaker - Pre Heat	
D1	**See 6.1**	555846	Interlock System Diode	
D2	**See 6.1**	555846	Test Diode	
D3	**See 6.1**	555846	Alarm Diode	
D4	**See 6.1**	555846	4WD Diode	
F1	**See 6.1**	5003278	Spare 5 Amp Fuse	
F2	**See 6.1**	5003278	Spare 5 Amp Fuse	
F3	**See 6.1**	5003281	Spare 15 Amp Fuse	
F4	**See 6.1**	5003281	Spare 15 Amp Fuse	
F5	**See 6.1**	5003278	5 Amp Fuse - Ignition Switch	
F6	**See 6.1**	5003278	5 Amp Fuse - Gauges	
F7	**See 6.1**	5003278	5 Amp Fuse - Interlock Circuit	
F8	**See 6.1**	5003281	15 Amp Fuse - Air Ride Seat	
F9	**See 6.1**	5003278	5 Amp Fuse - Cruise Control	Optional Cruise Control Kit
F10	**See 6.1**	5003278	5 Amp Fuse - 4WD	
F11	**See 6.1**	5003278	5 Amp Fuse - Deck Limit Switches	
F12	**See 6.1**	5003281	15 Amp Fuse - Mow Circuit	
K1	**See 6.1**	3001307	Interlock Relay	
K2	**See 6.1**	3001307	Run Circuit Relay	
K3	**See 6.1**	3001307	Start Circuit Relay	
K4	**See 6.1**	3001307	Brake (Start) Relay	
K5	**See 6.1**	3001307	Brake (Run) Relay	
K6	**See 6.1**	3001307	Neutral (Start) Relay	
K7	**See 6.1**	3001307	Neutral (Run) Relay	
K8	**See 6.1**	3001307	Neutral (Cruise Control) Relay	
K9	**See 6.1**	3001307	Left Mow Relay	
K10	**See 6.1**	3001307	Center Mow Relay	
K11	**See 6.1**	3001307	Right Mow Relay	
K12	**See 6.1**	3001307	Cruise Control Relay	
K13	**See 6.1**	3001307	4WD Relay	
K14		131905	Starter Solenoid	
K15	**See 23.1**	3001307	Run Circuit Cutout Relay	
K16	**See 23.1**	3001307	Auxiliary Circuit Relay	
K17	**See 23.1**	3001307	Ignition Circuit Relay	
M1	Not Shown		Starter Motor	Included with Engine
R1	Not Shown		Air Intake Pre Heat Timer	Optional Cold Start Kit
SOL1	Not Shown		Fuel Solenoid	Included with Engine
SOL2	**See 55.1**	4134530	Left Wing Mow Solenoid Coil	Included in 1004337 Deck Valve
SOL3	**See 55.1**	4134530	Center Mow Solenoid 1 Coil	Included in 1004337 Deck Valve
SOL4	**See 55.1**	4134530	Right Wing Mow Solenoid Coil	Included in 1004337 Deck Valve
SOL5	Not Shown	3008975	Cruise Control Magnet	Optional Cruise Control Kit
SOL6	**See 56.1**	4134530	4WD Solenoid Coil	Included in 1002977 4WD Valve

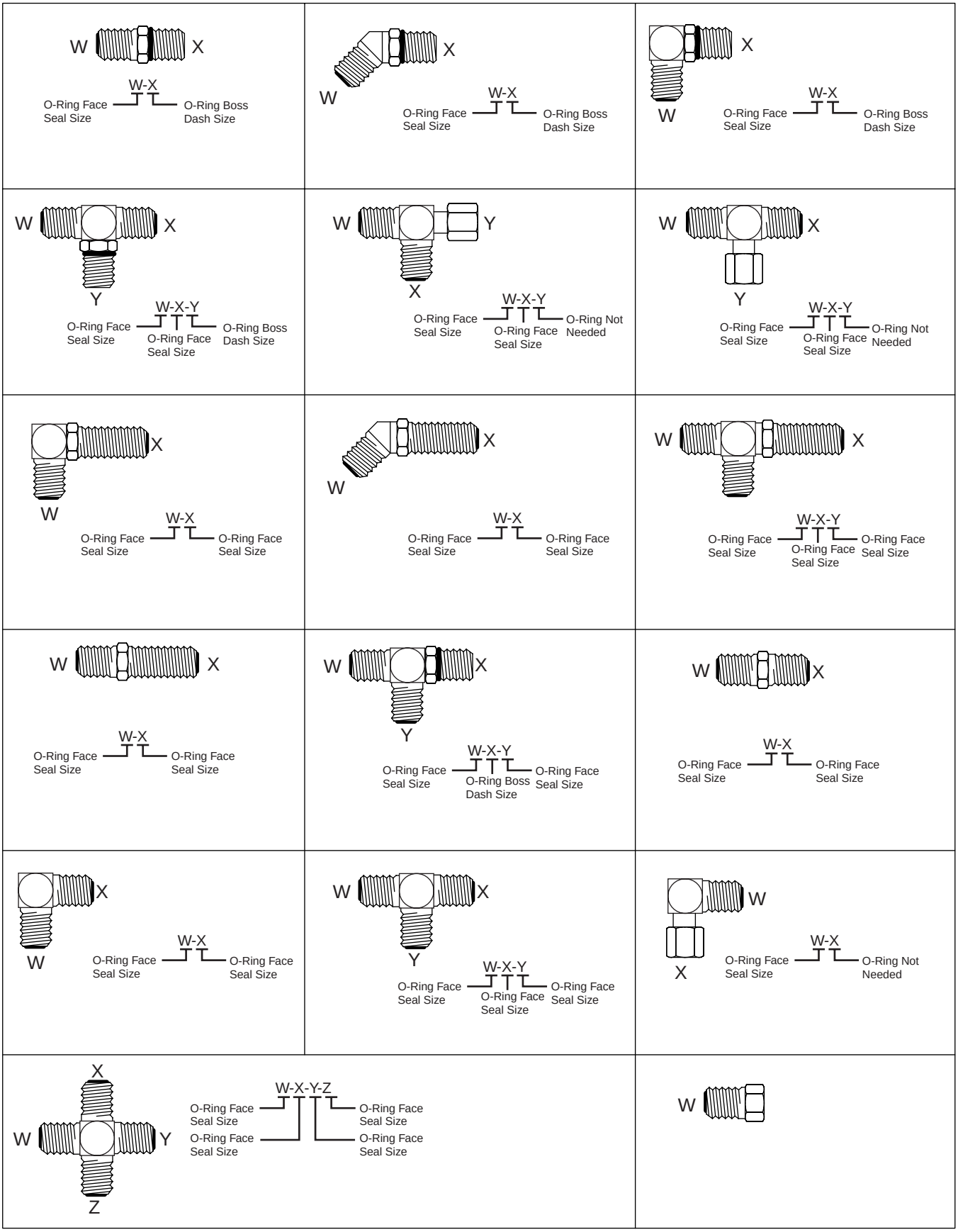
Item	Reference Illustration	Part Number	Description	Serial Numbers/Notes
SOL7	**See 56.1**	4134532	4WD Reverse Solenoid Coil	Included in 1002977 4WD Valve
SOL8	**See 55.1**	4134530	Center Mow Solenoid 2 Coil	Included in 1004337 Deck Valve
SW1	**See 6.1**	2810269	Ignition Switch	
SW2	**See 48.1**	554390	Seat Switch	
SW3	**See 6.1**	2721505	PTO Switch	
SW4	**See 31.1**	3007392	Left Wing Limit Switch	
SW5	Not Shown	3006442	Cruise Control Switch	Optional Cruise Control Kit
SW6	**See 8.1**	3007392	Neutral Switch	
SW7	**See 10.1**	3007392	Parking Brake Switch	
SW8	**See 28.1**	3007392	Front Limit Switch	
SW9	**See 31.1**	3007392	Right Wing Limit Switch	
SW10	**See 8.1**	3007392	Forward Switch	
SW11	**See 23.1**	3009203	Hydraulic Level Switch	
SW12	**See 6.1**	3006446	4WD Reverse Switch	
SW13	**See 6.1**	3006436	4WD Switch	
SW14	**See 6.1**	3006446	Test Switch	
SW15	**See 11.1**	556419	Charge Filter Switch	
SW16	Not Shown		Engine Oil Switch	Included with Engine
SW17	**See 22.1**	363996	Temperature Switch	
SW18	Not Shown	3007392	Left Brake Pedal Switch	Optional Cruise Control Kit
SW19	Not Shown	3007392	Right Brake Pedal Switch	Optional Cruise Control Kit
U1	Not Shown		Pre Heat Timer Relay	Optional Pre Heat Kit
U2	**See 23.1**	3009544	Seat Time Delay Relay	
U3	**See 6.1**	162723	Hour Meter	
U4	**See 23.1**	3006639	Fuel Sender	
U5	**See 6.1**	1002679	Light Gauge	
U5.2	**See 45.1**	1004931	Glow Plug Light	
U6	**See 22.1**	3008821	Temperature Sender	
U7	Not Shown		Alternator	Included with Engine
U8	**See 6.1**	366751	Hydraulic Oil Light	
U9	**See 6.1**	365943	Fuel Gauge	
U10	**See 6.1**	3005121	Temperature Gauge	
U11	**See 23.1**	366670	Alarm	
U12	**See 47.1**	5003625	Air Ride Seat Suspension	

Hydraulic Fluid*		
5001405	Two 2-1/2 Gallon Container of ISO VG68 Oil	
5001404	One 5 Gallon Pail of ISO VG68 Oil	
2500548	Two 2-1/2 Gallon Container of 10W30 Oil	
2500546	One 5 Gallon Pail of 10W30 Oil	
503409	Two 2-1/2 Gallon Container of ATF Fluid	
503407	One 5 Gallon Pail of ATF Fluid	
2-Cycle Oil		
554600	Twenty Four 16 Ounce Plastic Container	
554599	Twenty Four 8 Ounce Plastic Container	
Grease		
5000067	One 5 Gallon Pail OO-Grease	
5000068	Twenty Four 8 Ounce Tube OO-Grease	
Paint		
5003469	16 Ounce Gray Aerosol	
554598	Six 12 Ounce Orange Aerosol	
2500789	Twelve 1 Quart Can Orange	
546409	Two 1 Gallon Can Orange	
Lapping Compound		
5002488	One 10 Pound Pail of 80 Grit	
5002490	One 25 Pound Pail of 80 Grit	
5002489	One 10 Pound Pail of 120 Grit	
5002491	One 25 Pound Pail of 120 Grit	
Specialty Compound		
365422	5.3 Ounce Tube of Electrical Insulating Gel	
5001581	14 Ounce Can of Lubriplate Multi Lube A	
Biodegradable Hydraulic Fluid*		
5003102	One 55 Gallon Drum TGTSP GreensCare 68	
5003103	One 5 Gallon Pail TGTSP GreensCare 68	
5003105	One 55 Gallon Drum TGTSP GreensCare 46	
5003104	One 5 Gallon Pail TGTSP GreensCare 46	
4115976	One 55 Gallon Drum TGTSP GreensCare 32	
4115977	One 5 Gallon Pail TGTSP Greens Care 32	
5003106	Twenty Four 14 Ounce Tube Greens Care Grease	
O-Ring Kit		
5002452	SAE O-Ring Boss (3/32 ~ 2” Tube O.D.)	
5002453	Common O-Ring Kit	
5002454	O-Ring Face Seal ORFS (-4 ~ -24 ORS Tube Size)	
Right Start Kit for New Machines		
See your local TGTSP Dealer		
On-Time Maintenance Kit		
See your local TGTSP Dealer		

* Refer to the Operator’s manual or the Parts & Maintenance Manual for the correct hydraulic oil requirements for your machine. Textron Golf, Turf & Specialty Products offers a High Usage Parts Catalog illustrating commonly used Parts through easy to read line Drawings. See your local TGTSP Dealer for a copy.

69.1 O-Ring Chart

Serial No. All



Adapter Part Number.	Dash Size	Adapter Type	(W) O-Ring	(X) O-Ring	(Y) O-Ring	(Z) O-Ring
339972	4-4	Straight Adapter	339908	339896		
339974	4-6	Straight Adapter	339908	339897		
339979	6-6	Straight Adapter	339909	339897		
339984	8-8	Straight Adapter	339910	339898		
339989	10-10	Straight Adapter	339911	339899		
339990	10-12	Straight Adapter	339911	339900		
339994	12-12	Straight Adapter	339912	339900		
339996	12-16	Straight Adapter	339912	339901		
339999	16-16	Straight Adapter	339913	339901		
340026	6-6	45° Adapter	339909	339897		
340027	6-8	45° Adapter	339909	339898		
340029	8-8	45° Adapter	339910	339898		
340055	4-4	90° Adapter	339908	339896		
340061	6-6	90° Adapter	339909	339897		
340062	6-8	90° Adapter	339909	339898		
340065	8-6	90° Adapter	339910	339897		
340069	10-8	90° Adapter	339911	339898		
340070	10-10	90° Adapter	339911	339899		
340074	12-12	90° Adapter	339912	339900		
340075	12-16	90° Adapter	339912	339901		
340077	16-16	90° Adapter	339913	339901		
340078	6-6	90° Adapter	339909	339897		
340095	4-4-4	Straight Thread Branch Tee	339908	339908	339896	
340118	4-4-4	Swivel Run Tee	339908	339908		
340143	6-6-6	Swivel Branch Tee	339909	339909		
340144	8-8-8	Swivel Branch Tee	339910	339910		
340147	16-16-16	Swivel Branch Tee	339913	339913		
340167	6-6	90° Bulkhead Adapter	339909	339909		
340214	4-4-4	Bulkhead Run Tee	339908	339908	339908	
340215	6-6-6	Bulkhead Run Tee	339909	339909	339909	
340217	10-10-10	Bulkhead Run Tee	339911	339911	339911	
340219	16-16-16	Bulkhead Run Tee	339913	339913	339913	
340239	6-6	Union Bulkhead Adapter	339909	339909		
340269	10-12-12	Straight Thread Run Tee	339911	339899	339912	
340377	10-10	90° Swivel Adapter	339911			

SAE Boss O-Rings			ORS Face Seal O-Rings		
Dash Size	Thread Size	O-Ring	Tube Size	Thread Size	O-Ring
4	7/16-20	339896	4	9/16-18	339908
6	9/16-18	339897	6	11/16-16	339909
8	3/4-16	339898	8	13/16-16	339910
10	7/8-14	339899	10	1-14	339911
12	1 1/16-12	339900	12	1 3/16-12	339912
14	1 3/16-12	459296	16	1 7/16-12	339913
16	1 5/16-12	339901	20	1 11/16-12	339914
20	1 5/8-12	339902	24	2-12	339915
24	1 7/8-12	339903			
32	2 1/2-12	339904			

> Change from previous revision

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1002800 63
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1002952 67
1002953 65
1003001 60
1003011 67
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1003580 135
1003583 135
1003584 135
1003587 93
1003590 103
1003591 103
1003592 99
1003593 105
1003594 103
1003595 105
1003596 105
1003597 105
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1003599 103
1003600 103
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132647 79
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163302 127
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3006475 60
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